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BULLETIN OF THE
TULANE UNIVERSITY OF LOUISIANA

SERIES 15 JANUARY, 1914 NUMBER 1

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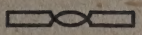
College of Arts and Sciences



ANNOUNCEMENT FOR

1914-1915

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CALENDAR, 1914.

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THE TULANE UNIVERSITY OF LOUISIANA

College of Arts and Sciences

1914-1915

CALENDAR

[The academic year is divided into two terms].

1914

Sept.	18	Friday to Saturday 26	Entrance and Condition Examinations for all Departments of the University.
Sept.	28	Monday	**University Year begins.** Registration of New Students.
Sept.	29	Tuesday	Registration of Old Students.
Sept.	30	Wednesday	Instruction begins.
Nov.	26	Thursday	Thanksgiving Day. A holiday.
Dec.	22	Tuesday	Christmas holidays begin at 4 p. m.

1915

Jan.	4	Monday	University reopens, 8:30 a. m.
Jan.	22	Friday	First Term Examinations begin.
Feb.	1	Monday	Second Term begins.
Feb.	16	Tuesday	Mardi Gras. A holiday.
April	2	Friday	Good Friday. A holiday.
May	21	Friday	Final Examinations begin.
May	30	Sunday	Baccalaureate Sermon, 10:30 a. m.
June	2	Wednesday	University Commencement. **Academic Year ends.**

FACULTY

ROBERT SHARP, Ph. D., President.

ALBERT BLEDSOE DINWIDDIE, M. A., Ph. D., LL. D., Dean and Professor of Mathematics and Astronomy.

ALCÉE FORTIER, D. Lt., Professor of Romance Languages.

ROBERT SHARP, A. M., Ph. D., Professor of English.

WILLIAM WOODWARD, Professor of Drawing.

WILLIAM BENJAMIN SMITH, A. M., Ph. D., LL. D., Professor of Philosophy.

ABRAHAM LOUIS METZ, M. Ph., M. D., Professor of Chemistry.

MORTON ARNOLD ALDRICH, Ph. D., Professor of Economics and Sociology.

REGINALD SOMERS COCKS, A. M., Professor of Botany.

BENJAMIN PALMER CALDWELL, A. B., Ch. E., Ph. D., Professor of Chemistry.

MAX HELLER, M. L., Professor of Hebrew.

CREIGHTON WELLMAN, M. D., Professor of Sanitary Science.

GEORGE EUGENE BEYER, Professor of Biology.

JOHN CHRISTIAN RANSMEIER, A. M., Ph. D., Professor of German.

EDWARD AMBROSE BECHTEL, Ph. D., Professor of Classical Languages.

MELVIN JOHNSON WHITE, Ph. D., Associate Professor of History.

J. HARRY CLO, Ph. D., Associate Professor of Physics.

WILLIAM PRENTISS BROWN, M. A., Assistant Professor of English.

JAMES EDWARD ROUTH, Jr., Ph. D., Assistant Professor of English.

ROBERT LEONVAL MENUET, B. E., Assistant Professor of Mathematics.

ERNEST RIEDEL, A. M., Ph. D., Assistant Professor of Classical Languages.

ALVIN PIKE HOWARD, Ph. B., Instructor in Anthropology and Eugenics.

HAL WALTERS MOSELEY, B. Sc., M. Sc., Instructor in Chemistry.

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JAMES J. A. FORTIER, A. B., LL. B., Instructor in French.
JAMES WALLACE HOPKINS, A. M., Instructor in Mathematics.
PERCY VIOSCA, B. S., Instructor in Biology.
ALBERT LOUIS VOSS, A. B., Teaching-fellow in German.
C. A. HANSON, Physical Director.
JOHN S. STRONG, B. S., Teaching-fellow and Instructor in Physics.
GEORGE B. COLLIER, B. S., Assistant in Chemistry.
OSCAR I. LEVY, Assistant in Physics and Chemistry.
SUMTER MARKS, Assistant in Latin.

COMMITTEES

FOR ARTS AND SCIENCES AND TECHNOLOGY

Committee on Curriculum: Professors Dinwiddie, Anderson, Ransmeier, Bechtel, Caldwell, Creighton, Aldrich.

Committee on Affiliated Schools: Professors Bechtel, Dinwiddie, Brown.

Committee on Admission and Advanced Standing: Professors Bechtel, Anderson, Menuet, Dinwiddie.

Committee on University Extension: Professors Lyon, Dinwiddie, Bechtel, White.

Committee on Heat, Light and Power Plant: Professors Anderson, Gregory, Clo, Rugan.

Committee on Students' Affairs: Professors Dinwiddie, Bechtel, Creighton, Caldwell.

Committee on Petitions: Professors Bechtel, White, Caldwell.

REGISTRATION

Registration days, for 1913-14, are, for new students, Monday, September 28; for old students, Tuesday, September 29. For students registering during the week following the regular registration days, a special fee of two dollars is charged. After that the late registration fee will be four dollars. For the second term there will be two registration days, Friday, January 29, and Saturday, January 30. Each student upon registration will obtain an admit card, which must be presented to the instructor in charge of each class in which the student is enrolled and must be signed by the instructor. When the card has been signed by all of the instructors, it is returned to the office.

REQUIREMENTS FOR ADMISSION

Applicants for admission should be not less than sixteen years of age.

A four years high school education or its equivalent is required for entrance. In order that the University may ascertain whether an applicant possesses this required preparation, the following plan has been adopted:

1) A high school course of 14½ "units" is taken as a standard.

2) A "unit" of high school work is a subject pursued through one school year, with not fewer than five recitation periods a week.

3) Fourteen and one-half units are required for full entrance.

4) With twelve units a student may be admitted to partial standing, on condition that the deficiency be made up in accordance with the rules (below) for the removal of conditions.

5) All applicants for admission must offer three units in English, three in Mathematics, and at least two in a foreign language.

6) Applicants entering for the degree of Bachelor of Arts must offer, in addition to the above specified units in English and Mathematics, three units in Latin and either two units in Greek, or one unit in History and one in Science.

7) Applicants entering for the degree of Bachelor of Science must offer, in addition to the specified units in English, Mathematics, and Language, two units in Science and two in History. For the two units in Science one additional unit in Mathematics and one in the Language selected under 5) may be substituted.

8) The units not specified above must be chosen from the table below, making 14½ units for full standing; providing that the total

number of units offered in any one subject may not exceed the maximum number stated opposite each.

1. English Composition	2	15. American History	1
2. English Literature	1 or 2	16. Physics	1
3. Elementary Algebra	1½	17. Chemistry	1
4. Plane Geometry	1	18. Biology (Bot. and Zoo.)	1
5. Solid Geometry	½	19. Botany	1
6. Trigonometry	½	20. Zoology	1
7. Latin	2, 3, or 4	21. Physiology	1
8. Greek	2 or 3	22. Physiography	1
9. French	2 or 3	23. Freehand Drawing	1
10. Spanish	2	24. Mechanical Drawing	½
11. German	2 or 3	25. Wood-working	½
12. Ancient History	1	26. Foundry Work	½
13. Med. and Mod. Hist.	1	27. Forge Work	½
14. English History	1	28. Machine Tool Practice	1

For more detailed information send for Bulletin on Entrance Requirements.

9) Certificates for work done in affiliated preparatory schools will be accepted only in the case of *graduates* of these schools. Applicants for admission who *have not graduated* from an affiliated school will be admitted only upon examination.

METHODS OF ADMISSION

Applicants for admission to the Freshman Class of the College of Arts and Sciences should be not less than sixteen years of age. They shall report to the Dean of the College of Arts and Sciences at least one day before the time set for the Entrance Examinations, in order that they may be properly instructed.

I. AS REGULAR STUDENTS

1. **By Examination.** Students desiring to enter the Freshman Class by examination, will be required to pass the necessary number of units as outlined under Requirements for Admission.

2. **By Certificate.** Graduates of certain approved schools are received on certificate. Such certificate should state in detail the studies pursued by the student, the time devoted to each study and the work actually done, with a general recommendation for conduct and studious habits. This certificate will be accepted only in so far as it conforms with the entrance requirements. Students entering from ap-

proved schools must obtain from the Secretary of the University the printed form of certificate required.

II. AS SPECIAL STUDENTS

Applicants unable to satisfy the entrance conditions may be admitted as special students provided they are at least twenty-one years of age, and give evidence of ability to do creditable work in specified courses; and are recommended to the faculty by the professor in charge of the department of study in which they desire to take a large part of their work. Special students may, at the discretion of the Dean, be required to stand the entrance examination in English. Should they prove, after admission, to be unable to profit by the work undertaken or to be neglectful of their work, they will be required to drop back into a lower class or to withdraw.

Such special students are subject to the same regulations in regard to number of hours, class-room work, and examinations as students in the regular courses.

A special student must successfully complete at least one-half of the work undertaken each term. Otherwise he shall be dropped for deficiency and may enter again only by passing the entrance examinations or by certificate from an affiliated school. Special students, entering without examination or certificate, will be required to satisfy all entrance requirements before they may become regular.

ADVANCED ADMISSION CREDIT

A student who enters with more than fourteen and one-half (14½) units and who has pursued courses of study beyond the range of the usual high school curriculum, may receive advanced admission credit provided the subjects are also college subjects and are successfully continued within two years after matriculation in the University, and provided the student's general record has given proof of superior scholarship. Application for such advanced admission credit must be made within one year after matriculation.

ADMISSION FROM OTHER COLLEGES

Students bringing certificates from the proper officers of other colleges of satisfactory grade may be credited, at the discretion of the Committee on Advanced Standing, with the work actually done elsewhere. Such students must obtain from the Secretary of the University the printed form of certificate required.

FEES AND EXPENSES

The annual tuition fee, in the College of Arts and Sciences, for all students not holding scholarships is $100.

Each student is required to pay a registration fee of $15 and an athletic fee of $5; and students working in laboratories are charged an annual fee of $15 for each laboratory used by them.

A medical fee of $5 will be charged non-resident students each session, which will provide for all medical attendance and hospital care in the College Infirmary in cases of ordinary and non-surgical illness. Students residing in New Orleans with parents or guardians may, at their option, receive this medical service upon payment of the fee at matriculation.

These fees are payable in advance in two equal installments, one-half at the beginning of each Term.

Students taking Chemical Laboratory must deposit a fee of $5 to cover the cost of breakage

A fee of $5, to cover expenses of graduation, diploma, etc., is charged to each person taking a degree. This fee must be paid to the Secretary at least ten days before Commencement. The amount is refunded should the degree not be conferred.

No deduction of fees is made for absence for less than a month. When the absence exceeds a month and the student has been withdrawn from the college because of continued sickness or other sufficient cause, a proportionate part of the amount paid will be refunded, on proper certificate signed by the Dean. Any application for return of tuition must be made within sixty days after the withdrawal of the student.

Students furnish their own books, drawing instruments, and drawing materials. They are required to pay the cost of apparatus which they may break or damage in the laboratories; they must also make good any other damage which they may cause to the University property.

Students may reside in the Dormitories, or obtain board and lodging at from $20 to $25 per month in boarding houses or private families at convenient distance from the University buildings.

The necessary expenses of a student are moderate; the spacious dormitories and the dining hall on the University grounds make possible comfortable, dignified living at a minimum cost.

The necessary expenses for a session are:

	MINIMUM	MODERATE
Tuition fee	$100.00	$100.00
Registration fee	15.00	15.00
Athletic fee	5.00	5.00
Board and lodging, including heat and lights	135.00	200.00
Laundry	15.00	15.00
Books and stationery	20.00	25.00
Laboratory fees	.. ..	30.00
Medical fee	5.00	5.00
Total	$295.00	$395.00

Students holding scholarships or free tuition (see below) deduct $100.00 from the above total.

AMOUNT OF WORK

Sixteen hours a week of recitations, lectures, or laboratory work constitute the normal amount of work, a laboratory period of two hours counting as one hour. No student may carry more than eighteen nor fewer than fifteen hours a week without special permission from the Faculty.

ATTENDANCE

Attendance must be regular and prompt.

Absences are to be excused only by the instructor in charge. Frequent absences without excuse will render the student liable to suspension or dismissal.

Students who are to be absent from the University in athletic, forensic, or other contests must obtain from the President or Dean leave of absence in advance.

EXAMINATIONS AND GRADES

At the end of the term an examination is held in each study pursued by the student. Seventy per cent is required on each examination for passing, and the examination mark, with the marks for the daily work, determine a student's grade for the term. The general average of these marks must be at least seventy per cent.

REMOVAL OF CONDITIONS

1) **Entrance Conditions:** Students admitted to partial standing in the Freshman class may remove their entrance conditions

a) by passing entrance examinations in the additional subjects necessary, provided such examinations are passed within one year after admission to the University.

b) by equivalent credits received from the Summer School.

Entrance conditions must be removed before the opening of the second college year.

2) **College Conditions**: A student whose term grade in any subject lies between 70 and 50 per cent. shall have two re-examinations and no more. These examinations will be set at the beginning and end of the First Term and at the end of the Second Term.

A student failing in both these examinations will take the subject over and reduce the number of hours in the regular course in proportion.

Students obtaining less than 50 per cent in either term will have one re-examination and no more at the beginning of the next year.

Seniors failing in any subject the first term will have two opportunities for the removal of the condition. The first re-examination will take place within three weeks after the beginning of the second term and the second will take place at the close of the second term. Seniors failing in any subject of the second term will have one re-examination and no more.

No condition examination will be given Seniors after the Saturday before Commencement.

A Senior who fails to pass for graduation with his class shall have the privilege of standing his examinations at the opening of the next session, and, if successful, will receive his degree.

Conditioned students absent from the regular condition examination must present an excuse satisfactory to the professor in charge of the subject or receive a zero for the examination. When an excuse has been accepted a special examination will be held for which a fee of two dollars will be charged, payable to the Secretary. The time for such an examination must be arranged by the student with the professor in charge, and before taking the examination the student must obtain a permit from the Dean and the Secretary's office. This permit must be presented to the professor holding the examination.

Any student having six term conditions at the beginning of the Academic Year will be required to take the class over with the exception of subjects in which he obtained 80 per-cent or over. Permission to take any advanced work must be obtained from the Dean and the professors concerned.

No student with more than two term conditions may be permitted to register as a member of the next higher class but shall be considered a member of the same class as the year before, until the number of his unremoved conditions shall not exceed two.

The summer vacation should be devoted to work preparatory to condition examinations, as deficient students should not carry extra work during term time.

SCHOLARSHIPS

State Scholarships. Under Section 6 of Act No. 43 of 1884, the University gives free tuition in the College of Arts and Sciences to one student from each senatorial and from each representative district or parish of the State of Louisiana. By Special Act of the Board of Administrators these scholarships are for the present allowed also in the College of Technology. In the Department of Architecture as re-established no free scholarships will be available. In accordance with the terms of this Act, the following rules have been adopted in regard to the candidates for these scholarships:

1. As provided in said act there shall be one such scholarship for each senator and each representative in the State, and it shall confer the privilege of free tuition.

2. Whenever a vacancy exists in the scholarship it may be filled by the then sitting member for that district; provided, however, that the vacancy must be filled before the expiration of his term, otherwise his successor shall make the nomination.

3. The candidate must be a *bona fide* resident of the district or parish from which he is appointed; that is, his parents, or guardian, shall be domiciled in said district or parish.

4. He must be a white male youth, not less than sixteen years of age, prepared for college work.

5. He may enter any regular class for which he is qualified. For entrance to the Freshman class reference is made to the requirements for admission given under Admission to the University,

6. His application for admission to the University must be in writing, stating the name and post-office address of his parents or guardian, and the date of his birth.

7. Accompanying his letter of application he must present his appointment. Blanks for appointment may be obtained from the Secretary of the University. In order to identify the signature to such

appointment of the senator or representative making it, his signature must be acknowledged by him before some competent state official.

City Scholarships. In accordance with the provisions of Ordinances Nos. 6767 and 7540, A. S., of the City Council of New Orleans, the Mayor of New Orleans appoints annually five students from the public schools of the City to scholarships in the College of Arts and Sciences and College of Technology.

Honor Scholarships. A scholarship in the Freshman Class is awarded annually to that graduate of the McDonogh High School No. 1, of the City of New Orleans, who has been most distinguished for scholarship, deportment, and punctuality. This scholarship is filled upon the recommendation of the Principal and Faculty of the High School.

The Administrators of the University desire to encourage schools of proper grade *in Louisiana*, which may prepare students for the University. To this end they have authorized the president and faculty to offer to meritorious students scholarships in the College of Arts and Sciences and College of Technology; such scholarships are offered annually in each Louisiana school of proper grade, it being understood that these scholarships are to be a reward of merit, and are to be offered by the principal and faculty of the school or academy to the two students having the highest average grade; and in case either or both decline, the scholarship or scholarships declined should then be offered to the student or students having the next highest grade, provided that grade fall not below the rank of excellent.

Board Scholarships. The Administrators of the Tulane Educational Fund grant free tuition in the College of Arts and Sciences and College of Technology to a limited number of meritorious and needy students. Application blanks for these scholarships may be obtained from Mr. L. A. Wogan, Secretary, 211 Camp Street.

The Baker Scholarships, two in number, endowed by the late Mrs. Elizabeth Stone Baker for the education of two poor and worthy young men, are open to graduate and undergraduate students. They yield, each, about $89.90.

Louisiana Battle Abbey Scholarship. This is endowed by the Louisiana Battle Abbey Association and will be awarded to a worthy descendant of a Louisiana Confederate veteran, who shall qualify for it through a competitive examination. Applications for this scholarship should be addressed to Mr. L. A. Wogan, Secretary, 211 Camp St.

The Weis Scholarships. In memory of the late Julius Weis, his family has established ten loan scholarships of one hundred and twenty-five dollars ($125.00) each. These scholarships will be awarded upon the recommendation of the faculties of the Colleges of Arts and Sciences and of Technology to students in Junior classes who, for lack of necessary funds, may find it impossible to finish the work of the Senior year. Students who wish to avail themselves of this fund should make application to the Faculties not later than May 1st. Two of these scholarships are now available to the members of the Junior Class.

If a sufficient number of worthy applicants do not apply from the College of Arts and Sciences and from the College of Technology, it shall be possible for the Faculties of these Colleges to award one or more scholarships to applicants in the Junior Classes from the Law and Medical Colleges.

FORFEITURE OF SCHOLARSHIPS

Students holding State or City Scholarships are required to carry at least 14 hours of College work each term, unless excused by the Dean, and are required to maintain an average grade of at least seventy per cent in their studies or forfeit their scholarships, this forfeiture to take place at the close of the academic session in June. When a State or City Scholarship has been once forfeited, the legislator or mayor is notified of such forfeiture and the reasons therefor, and a student may re-enter on such scholarship only when newly appointed by the proper officer in the proper legal manner.

Students holding Honor Scholarships or Board Scholarships are required to carry at least 14 hours of College work each term, unless excused by the Dean, and must maintain an average grade of at least seventy per cent in their studies or forfeit their scholarships at the end of any term in which the low average occurs. But any student whose scholarship has been thus forfeited may regain it at the end of the following term if the required standard has been maintained; and the scholarship so regained may be retained as long as the required standard continues to be maintained and not longer.

Holders of scholarships absenting themselves from classes without satisfactory excuse render themselves liable to forfeiture of their scholarships at any time that the faculty may see fit to impose the penalty.

STUDENTS' AID AND SELF-HELP.

Students' Aid Fund. Worthy students of the Sophomore class or higher classes may borrow a small sum of money from a fund, founded by Dr. A. L. Metz, to tide them over financial emergencies. Requests must be approved by the Deans of the Colleges of Medicine, Technology, and Arts and Sciences.

Self-Help. Every effort will be made to offer opportunities for self-help to deserving and earnest students of slender means. The desire is that no young man who is determined to have a college education shall ever be turned away for lack of means. Effort will be made to secure work for those willing and able to help themselves, but there can be no guarantee of this and young men should be provided with sufficient means to meet their wants for a few months at least. During the last session work has been given all who have applied.

During past sessions increasingly larger numbers of students have been given work. These opportunities will continue to be offered, and other means of support have been devised. A bureau of self-help has been established, and an appeal is made to friends of the University and of education to give employment to students whenever possible.

MEDALS

The Glendy Burke Medals—founded in 1848 by Glendy Burke—consist of three gold medals which are awarded, one for Oratory, one for superior attainments in Mathematics, and one for an English Essay.

The Judah Touro Medals—founded in 1848 by Judah Touro—consist of three gold medals, which are awarded for excellence in Latin, in Greek, in Hebrew, and in Ancient History.

The Louis Bush Medal—founded in 1882 by Louis Bush—consists of a gold medal and is awarded for the best essay in the French Language.

The J. Hanno Deiler Medal—founded in 1909 by Professor John Hanno Deiler—consists of a gold medal and is awarded for excellence in German.

Competition for the above medals is restricted to members of the Junior and Senior classes.

The Carnot Medal.—A medal is offered annually by Baron Pierre de Coubertin to the successful contestant in a debate upon some question related to French politics, and is open to competition to all students of the University.

General Rules Governing Awards of Medals.—No medal is awarded except when marked excellence is exhibited in the subject of the competition.

No medal shall be awarded to any student who is under condition at the time of the award of such medal.

In all cases where the awarding of medals is not distinctly specified by the terms of the donation, the students must compete on the basis of work above and beyond the prescribed course; such work will be assigned by the faculty at the end of each session for the succeeding session. The essays must be typewritten and handed to the Secretary of the University not later than May 1st, with a full list of the authorities consulted and a pledge that the work is original, and must bear a fictitious signature, accompanied by the name of the writer in a sealed envelope.

COURSES OF STUDY

The following courses of study are offered, either entirely within the College of Arts and Sciences or in conjunction with other colleges of the University:

1. **The Classical Course,** a four years' course, leading to the degree of Bachelor of Arts, and requiring the study, for two years, of both Latin and Greek.

2. **The Literary Course,** a four years' course, leading to the degree of Bachelor of Arts, and differing from the Classical Course in substituting for either Latin or Greek further study of French or German, and in its group system of elective studies.

3. **The Scientific Course,** a four years' course, leading to the degree of Bachelor of Science, and offering fundamental training in mathematics and in natural sciences, with a broad basis of general culture.

4. **The Course in Education**, a four years' course, leading to the degree of Bachelor of Arts in Education, and designed to give prospective high school teachers a sound academic basis of general culture, an accurate knowledge of, and training in, the fundamentals of educational science, and an extended study of the subject they wish to teach.

5. **The Pre-Medical Course,** a one-year course, for students not candidates for an academic degree, arranged to meet the demands of the best medical instruction and giving full preparation for entrance into the freshman class of the Tulane Medical School.

6. **The Combined Academic-Law Course,** which enables the diligent and ambitious student to complete the work required for both the Bachelor of Arts and the Bachelor of Laws degrees in six years, without sacrificing or lowering the standard or quality of either degree.

7. **The Combined Academic-Medical Course,** which enables the diligent and ambitious student to complete the work required for both the B. S. and the M. D. degrees in seven years, without sacrificing or lowering the standard or quality of either degree.

An outline of the courses is given below. For detailed information on the character of work in each subject, see under Courses of Instruction.

Classical Course

FRESHMAN YEAR — HOURS

Latin 1	3
Greek 2	3
English 1, 2 (Composition and Rhetoric; American Literature)	3
Mathematics 1-3 (Algebra, Plane and Spherical Trig.; Anal. Geom.)	5
History 1 (Mediæval and Modern Europe)	3
	17

SOPHOMORE YEAR

Greek. 3	3
Latin. 2	3
English. 3. Literature	3
German. 1. or French. 1*‡	3
Mathematics. 4, 5, 6.	5
Physics. 1. Experimental	3+2
Chemistry. 1, 2, 3. General *	3+2
Biology. 1. General	3+2
Botany. 1. Introductory	3+2
	17

JUNIOR AND SENIOR YEARS

30 hours, wholly elective.

Literary Course

FRESHMAN AND SOPHOMORE YEARS — HOURS

English. 1, 2. Composition, Rhetoric, American Literature	3
English. 3. Literature, Language	3
Greek. 2. Greek. 3 Latin. 1, Latin. 2 German. 1. German. 2 French. 1. French. 2 Spanish. 1. Spanish. 2 †‡	12
History. 1. History. 2. History. 7 Economics. 1. Principles Philosophy. 1, 2. Psychology, Logic ‡	6
Mathematics. 1, 2, 3. Algebra, etc	5
Mathematics. 4, 5, 6. Physics. 1. Experimental Chemistry. 1, 2, 3. General * Biology* { Zoology. 1 Botany. 1	3+2
	34

JUNIOR AND SENIOR YEARS

9 hours in one of the following groups:

1. Ancient Languages.
2. Modern Languages.
3. English.
4. Philosophy and Mathematics.
5. History, Government, Economics, Sociology.

Remaining 21 hours, elective.

Scientific Course

FRESHMAN YEAR		HOURS
English. 1, 2. Composition, Rhetoric, American Literature		3
German. 1. or French. 1.*‡		3
History. 1. Europe		3
Mathematics. 1, 2, 3. Algebra, etc		5
Chemistry. 1, 2, 3. General Physics. 1. Experimental Biology* { Zoology. 1. Botany. 1.	*	3+2
Drawing. 1. Freehand		1
		20

SOPHOMORE YEAR		HOURS
English. 3. Literature, Language		3
German. 2. or French. 2*		3
Mathematics. 4, 5, 6. Analytic Geom., Diff. and Int. Calculus		5
Chemistry. 1, 2, 3. General Physics. 1. Experimental Biology* { Zoology. 2. Botany. 1.	*	3+2
Chemistry. 4, 5. Qualitative and Quantitative Analysis Physics. 3, 4. General Biology* 5, 6. or, 7, 8, or, 9, 10* Botany. 3, 4, or 5*	*	3+2
		21

JUNIOR AND SENIOR YEARS

30 hours, elective, except that some one science must be continued from Freshman and Sophomore to a total of three years, and a second science to a total of two years.

*Elect one subject.

†Elect a total of four courses for the two years, one of which must be an ancient language.

‡Students who offer French or German as an entrance requirement will not receive credit toward graduation for French 1 or German 1 in college.

ʔElect two courses.

Course in Education.

FRESHMAN YEAR	HOURS
English 1, 2. Composition, Rhetoric, American Literature	3
Foreign Language	3
Physics 1, or Chemistry 1, 2, 3	5
Mathematics, 1, 2, 3. Algebra, Trigometry, Anal. Geom	5
Elective	3
	19

SOPHOMORE YEAR	
English 3. Literature, Language	3
Foreign Language	3
Biology 1, 2	5
History 1	3
Elective	3
	17

JUNIOR AND SENIOR YEARS

EDUCATION

30 hours. In the Junior year there are required 5 hours in General and Educational Psychology, and 2 hours in Educational Hygiene; in the Senior year there are required 5 hours in History and Principles of Education, and 2 hours in Elementary or Secondary Education. The remaining 16 hours are elective.

Pre-Medical Course for Students not Candidates for an Academic Degree

This course is arranged under the teaching heads of the several departments listed below; the hours of teaching are the same as those provided for students actually engaged in the work in these branches in the Academic and Medical Departments respectively:

BIOLOGY—1, General Biology; 2, Embryology; 3, Zoology.

BOTANY—1, Structure and Functions of Plants; 2, Morphology and History of Flowering Plants; 3, Classification and Distribution of Flowering Plants; 4, Plant Pathology; 5, Medical Botany.

PHYSICS—1, Experimental Physics; 2, General Physics.

CHEMISTRY—General Inorganic Chemistry.

MODERN LANGUAGE—At least one year of study in German, French, or Spanish is required.

Combined Academic and Law Course

Students in the College of Arts and Sciences may, in their senior year of college work, take the following course, for which credit will be allowed by both the Academic and the Law Faculties:

One Course in the Department of Economics and Political Science: Three hours a week.

One Course in French or Latin: Three hours a week.

Elective in Arts and Sciences: Three hours a week.

Contracts: Three hours a week.

Torts: Two hours a week.

Property I: Two hours a week.

The completion of this course will entitle the student to receive the academic degree and will enable him to finish the work for the law degree in two more years.

Combined Academic and Medical Course

Students in the College of Arts and Sciences may, in their senior year of college work, elect certain courses in medical science, for which credit will be given to the extent of not more than fifteen hours towards the bachelor's degree.

COURSES OF INSTRUCTION

[*Unless otherwise indicated, each course runs through the year and is elective.*]

ASTRONOMY

PROFESSOR DINWIDDIE

Astronomical Observatory

1. Descriptive Astronomy.

A general course, with occasional meetings at night for observation. The course is fully illustrated by globes, charts, and lantern slides; and there is some work with the transit, sextant, etc., in determinations of time, latitude, true bearings, and other astronomical data.

Young, *Manual of Astronomy*; Upton, *Star Atlas*; Willson, *Laboratory Manual of Astronomy.*

Four hours a week. Elective for Juniors and Seniors in Department of Arts and Sciences.

2. Celestial Mechanics and Practical Astronomy.

The object of this course is to meet the needs of those students who may desire to elect astronomy as a subject for more extended study.

Moulton, *Celestial Mechanics*; Campbell, *Practical Astronomy.*

BIOLOGY

PROFESSOR BEYER

Physics Building

1. General Biology.

The fundamental laws and principles of nature, the origin and development of organic forms, and the factors of evolution are discussed. Study of types from the simplest to the most complex, is then taken up, emphasis being laid upon the tracing of life-histories and the evolution from type to type. The first term is devoted to Botany, the second to Zoology. The course concludes with comparative vertebrate morphology and man's position in the system.

Campbell, *The Evolution of Plants;* Parker and Haswell, *Manual of Zoology.*

Three hours a week.

2. Biological Laboratory.

Preliminary instruction is given in laboratory methods and the use of the compound microscope. The more important forms discussed in text and lecture are then studied in detail.

There will be no text-book; guide sheets outlining the work will be issued by the instructor.

Two periods a week. Required of all that take Course 1.

3. Embryology.

An introduction to the processes of development in plants and animals. The course is comparative throughout and presents embryology in its function of determining phylogeny.

Text-book: Foster and Balfour, *Elements of Embryology.*

Three hours a week. First Term. Open to all that have completed Course 1, or its equivalent.

4. Embryological Laboratory.

The student will be required to follow and explain in detail the ontogeny of type specimens of plants and animals.

Two periods a week. Required of all that take Course 3.

5. Human Anatomy and Physiology.

While not as exhaustively treated as in the medical courses, a thorough foundation of the subjects, nevertheless, is laid. Particular emphasis is given to the origin and development of the various structures and functions of the human body, by comparison with those of the lower forms of animal life.

Martin, *Human Body.*

Three hours a week.

6. Physiological Laboratory.

The work in the laboratory follows the lecture course.

Two periods a week. Required of all who take course 5.

7. Entomology, Bacteriology, and Parasitology.

The subjects in this course are especially adapted to students intending to enter the medical profession. In the first part the structure and life histories of all orders of insects which may or do enter into direct relation with man or animals by their agency in disease transmission are especially studied. The second part, Bacteriology, consists of a comprehensive course of lectures on bacterial life and development. The third part, Parasitology, is devoted to the study of the life history of animal parasites.

Three hours a week. Open only to those who have completed courses 1 to 6.

Abbott, *Principles of Bacteriology;* Jordan, *General Bacteriology.*

8. Bacteriological Laboratory.

In the laboratory the student will be taught entomological dissection, the preparation of microtome material, cleaning and sterilization of bacteriological glassware, the preparation of culture media, culture and staining methods of bacteria, etc.

Two periods a week. Required of all that take course 7.

Archinard, *Bacteriology*.

9. Theoretical Biology.

In the First Term the science is studied historically, tracing the origin and development of the more important questions that confront the biologist to-day. In the Second Term the answering theories are explained and discussed in some detail.

Text-book: Osborn, *From the Greeks to Darwin*. Collateral reading of Darwin, Wallace, DeVries, Weismann, Haeckel, and others.

Three hours a week. Open to all that have completed Courses 1 to 8, or their equivalents.

10. Biological Laboratory.

The work will follow the lecture course and will deal largely with cytology.

Two periods a week. Required of all that take Course 9.

BOTANY

PROFESSOR COCKS

1. A General Introductory Course comprising the study of the structure and functions of the different plant organs and their relation to their environment.

Two lectures and three laboratory periods a week. First term.

2. A Study of Special Types beginning with the simplest and advancing to the most complex. There will also be some work in description and classification of the local flora.

Two lectures and three laboratory periods a week. Second term.

This course, together with course 1, is intended to furnish a preliminary survey of the whole subject and is a prerequisite to any other course.

3. The Morphology, Physiology, Classification, and Life History of Thallophytes.

Two lectures and three laboratory periods a week throughout the year.

4. The Morphology, Physiology, Classification, and Life History of Mosses and Ferns.

Two lectures and three laboratory periods a week throughout the year.

5. The Morphology, Physiology, Classification, and Life History of Seed Plants.

Two lectures and three laboratory periods a week throughout the year.

CHEMISTRY

PROFESSOR METZ PROFESSOR CALDWELL

ASSOCIATE PROFESSOR WILLIAMSON

MESSRS. MOSELEY, COLLIER, AND LEVY

Richardson Chemistry Building

1. General Chemistry.

Lectures, demonstrations, and recitations, involving general principles, laws of chemical combination, and a description of the elements and their important compounds.

McPherson and Henderson, *A Course in General Chemistry*.

Three hours a week.

2. General Chemistry Laboratory.

Introductory practice for the purpose of familiarizing students with the appliances, methods of manipulation, and processes of the laboratory.

Smith and Hale, *Laboratory Outlines of General Chemistry*,

Two periods a week. First term.

3. Elementary Qualitative Analysis.

Noyes, *Qualitative Analysis*.

Two periods a week. Second term. Courses 2 and 3 are required of all who take course 1.

4. Qualitative Analysis. First term.

Stieglitz, *Qualitative Analysis*.

5. Quantitative Analysis. Second term.

Foulk, *Quantitative Analysis*.

Two hours recitation, three periods laboratory practice. Courses 4 and 5 are required of Scientific Sophomores specializing in Chemistry. Elective for all Arts and Science students who have completed courses 1, 2, and 3.

7. Organic Chemistry.

Cohen, *Theoretical Organic Chemistry*.

Three hours a week. Scientific Juniors specializing in Chemistry. Elective for all others who have completed courses 1, 2, and 3.

8. Organic Chemistry Laboratory.

Preparation and analysis of typical organic compounds.

Cohen, *Practical Organic Chemistry*.

Two periods a week. Required of students who take course 7.

9. Theoretical and Physical Chemistry.

A study of the laws of chemical combination; the properties of

gases, liquids, solids; solutions; thermo-chemistry; electro-chemistry; photo-chemistry; chemical dynamics and statics.

Walker. *Introduction to Physical Chemistry.*

Three hours a week. Scientific students specializing in Chemistry. Elective for all others who have taken courses 1, 2, and 3, and are sufficiently prepared in physics and mathematics.

10. Physical Chemistry Laboratory.

Walker, *Introduction to Physical Chemistry.*

Two periods a week. Required of all Scientific students specializing in Chemistry who are taking course 9.

CLASSICAL LANGUAGES

PROFESSOR BECHTEL ASSISTANT PROFESSOR RIEDEL

MR. MARKS

Gibson Hall, Rooms 2, 25, 27.

GREEK

Provision is made for those who have had no Greek before coming to the University. The Elementary Course, five hours a week throughout the year, will fully cover the preparatory work required in Greek for admission to the Classical Course. This elementary course makes it possible for Classical students, even though entering with insufficient preparation in Greek, to complete within the four years all their required work and more; it also makes it possible for Literary students to gain in college a fair knowledge of the language, literature, and culture of Greece.

1. Elementary Greek: Grammar; Xenophon's Anabasis; Greek Prose Composition.

As soon as the essential forms of the noun and the verb have been mastered, the translation of the Anabasis is taken up, with thorough drill in forms and syntax; exercises in composition are required once each week.

Burgess-Bonner, *Elementary Greek;* Hadley-Allen, *Greek Grammar*; Smith, *Xenophon's Anabasis.*

Five hours a week. RIEDEL

2. Lysias: Selected Orations: *For the Cripple*; *Against Eratosthenes*, with a careful review of the history of the Peloponnesian War and the rise and fall of the Thirty Tyrants; *On the Sacred Olive Tree* and *Against the Grain Dealers*, accompanied by an outline study of the economics of ancient Athens. This part of the course includes also a systematic review of forms and syntax, with exercises in Greek prose composition based upon the text of Lysias.

Homer: Odyssey. This part of the course consists in the rapid reading of the Odyssey, Books I, V-XI. While the main purpose of the course is the enjoyment of Homer as poetry, it includes a thorough study of the Homeric dialect, forms, syntax, and metres.

Text Books: Morgan, *Lysias, Selected Speeches*; Merry, *Homer, Odyssey, I-XII*; Liddell & Scott, *Intermediate Greek Lexicon.*

Three hours a week. Freshmen, Classical. Open to those who have had course 1 or an equivalent. RIEDEL

3. Oratory: Demosthenes, *On the Crown.*

The reading of this oration is accompanied by a systematic study of the rise and spread of the Macedonian Empire, the heroic struggle of Athens against it, and its influence upon the civilization of the world.

Drama: Sophocles, *Antigone;* Aristophanes, *Clouds.*

The second half of the year is devoted to the careful interpretation of a representative Greek tragedy and comedy as works of dramatic art; the history of the development of the Greek drama, the metres of both chorus and dialogue parts, the Greek theatre, and the method of presenting Greek plays are also studied.

Three hours a week. Sophomore, Classical. Open to those who have had course 2 or an equivalent. BECHTEL

[**4. Herodotus**; Books VI and VII.

Thucydides: Sicilian Expedition, Books VI and VII.

Three hours a week. Open to students who have completed Greek 3]. Alternates with Course 5. Not given in 1914-15. BECHTEL

5. Plato: *Apology*, *Crito*, and *Phaedo*. **Theocritus.**

Homer: *Iliad.* Selections from the entire poem will be read.

Three hours a week. Open to all students who have completed Greek 3, or an equivalent. Course 5 alternates with Course 4. RIEDEL

LATIN

0. Virgil: Aeneid.

Introduction to Latin poetry; metres, style, and subject matter of the Latin Epic.

Three hours a week. Required of all classical students who enter with less than four units in Latin. No college credit. MARKS

1. Terence: Phormio; **Ovid**: Metamorphoses; **Cicero:** Cato Major.

This course includes a careful review of the classical forms and syntax and prose composition. Stress is laid upon the use of idiomatic English in translation.

Gildersleeve-Lodge, *Latin Grammar;* Bennett, *De Senectute*; Laing,

Ovid; Bennett, *Latin Composition*; Elmer, *Phormio;* Lewis, *Latin Dictionary.*

Three hours a week. Freshmen, Literary and Classical.

RIEDEL

2. Livy: Selections from the Third Decade.

Horace: Satires and Epistles.

Three hours a week. Sophomores, Literary and Classical.

BECHTEL

3. Horace: Odes and Epodes.

Pliny: Selected Letters.

Three hours a week. BECHTEL

4. Tacitus: Agricola and Germania. Selections from Histories.

Juvenal: Satires.

Three hours a week. BECHTEL

[**5. Tacitus:** Annals, I-VI.

Plautus: Captivi and Mostellaria.

Three hours a week. Course 5, alternating with course 4, will not be given in 1914-15.] BECHTEL

6. Roman Law.

An introductory outline of certain fundamental principles of Roman law, together with the reading of large portions of the Institutes of Justinian.

Open to students who have completed Latin 1 and 2, or an equivalent.

Two hours a week BECHTEL

DRAWING

PROFESSOR WILLIAM WOODWARD

Gibson Hall, Room 13.

Freehand drawing is required throughout the Freshman year in the Scientific Course both for its training value and as a language or means of graphic expression, with which a man of science should be equipped.

1. Freehand Drawing.

Exercises in drawing from plaster casts of ornament, etc., to train the eye in estimating proportion quickly and accurately and the hand in recording form in line with proper shading.

Practice in applying the laws of perspective to object-drawing with shading. Work in the museum.

Application of color to the study of models and other objects.

Elements of mechanical drawing and lettering.

One period a week. Scientific Freshmen.

ECONOMICS AND SOCIOLOGY

PROFESSOR ALDRICH

Gibson Hall, Room 40

1. Principles of Economics.

The principles of economic life are studied with constant reference to the economic aspects of legal and political problems and to the development of the United States. Certain topics of applied economics, such as the tariff, trade unions, and trusts, are selected for more extended discussion in the light of these principles.

Much of the class-room work takes the form of free, oral discussion. A fundamental aim is to aid students to think, with accuracy, insight, and sound judgment, for themselves.

Taussig, *Principles of Economics*; and parallel reading.

Three hours a week.

2. The Growth of American Life and Character: History and Interpretation.

The aim is to widen and deepen the student's understanding of the changes going on in the environment and character of the American people.

A chronological outline of changes in the structure and spirit of American society leads to discussions of the direction and methods of social progress; of important diversities in American life, such as unlikenesses between individuals, races, sections, city and country life, and economic and social classes; of the unity which does or should underlie these diversities; and of the meaning of democracy and of a democratic spirit.

Three hours a week. Usually open only to students who have taken Economics 1.

[**3. Problems of Labor and of Industrial Organization.**

This course aims to promote understanding and sound judgment on questions of capital and labor. To this end it deals with: (a) The economic and social condition of workingmen. (b) Organized efforts to improve these conditions, such as workingmen's insurance, trade unions, profit sharing, and coöperation.

Three hours a week. Usually open only to students who have taken Economics 1].

Omitted in 1914-15.

[**4. Money, Banking, and International Payments.**

The principles underlying the phenomena of money and banking are sought through study of the production of the pre-

cious metals, the history of prices, and the experiences of various countries with metallic and paper money, credit, and banking. The Babson, Brookmire, and Financial Graphic charts and financial services are used in the study of the money market; and especial attention is given to the subjects of crises and cost of living and to the proposed changes in the National banking system.

Three hours a week. Usually open only to students who have taken Economics 1.]

Omitted in 1914-15.

5. Public Finance.

More than one half of the work deals with the subject of taxation; but some attention is given to financial administration, public debts, the budget, and selected topics in the financial history of the United States.

Three hours a week. Usually open only to students who have taken Economics 1.

EDUCATION

For the present the courses in Education are offered in the Extension Department; these are open to all students in the College of Arts and Sciences. A special bulletin of the Extension Courses may be had upon application.

ENGLISH

PROFESSOR SHARP — ASSISTANT PROFESSOR BROWN
ASSISTANT PROFESSOR ROUTH
Gibson Hall, Room 39 — *Gibson Hall, Room 24*

1, Composition and Rhetoric.

All Freshmen. Two hours a week.

The purpose of this course is to awaken and cultivate the creative power, and, by the study of selected literature and frequent practice in writing to instill a taste for good reading and to develop an accurate and effective power of expression.

Recitations; daily themes on assigned subjects, popular and literary, corrected and discussed. Fortnightly compositions, descriptive, narrative, expository, argumentative, corrected and criticized.

BROWN

2. American Literature.

All Freshmen. One hour a week.

The history of American literature and its relation to national life and society. Assigned readings.

Assigned readings in English literature, and in classical mythology in so far as it bears upon English literature. BROWN

3. English Literature.

Three hours a week. All Sophomores.

The history and development of the literature from Chaucer to Tennyson will be studied. The survey of the progress and growth of the literature is accompanied by the study of representative masterpieces in prose and poetry. Attention will be paid to the development and growth of the language as observed in the progressive study of the literature.

Fortnightly compositions will be discussed and criticized before the class. ROUTH

4. English Drama.

Three hours a week. First term. Elective in Junior and Senior years.

Selected plays of the Elizabethan period, including two or more of Shakespeare's plays, will be studied. Frequent reports and essays will be discussed and criticized. BROWN

5. Chaucer.

Three hours a week. Second term. Elective in Junior and Senior years.

The study will be mainly literary, but attention will be paid to language, grammar, and metre, and to Chaucer's relation to his time. BROWN

6. Practice in the Preparation and Delivery of Oral Arguments.

Three hours a week. First term. Elective in Junior and Senior years. ROUTH

7. English Poetry of the Nineteenth Century.

Three hours a week. Second term. Elective in Junior and Senior years.

The purpose of this course is to study selections from the works of a number of poets as expressions of the period and of the art of the individual poets and their attitude toward life. ROUTH

8. Old English.

Three hours a week. Both terms. Elective in Junior and Senior years.

This course is intended as an introduction to the advanced study of the language and literature. Grammar; written exercises; readings. BROWN

English 9. Journalism.

This course is designed to equip students who contemplate journalism as a career with:

(1) The ability to write with speed forcible English that does not require subsequent revision.

(2) The ability to observe and report correctly and concisely events that have taken place.

(3) A knowledge of the character and style of the most important American papers, and of some foreign papers.

(4) Accurate knowledge of the law of libel.

(5) Some introductory information on printing and newspaper organization.

The lectures on law will be supplied by the Department of Law of Tulane. Other lectures are promised by editors, foremen of newspapers, and practical printers. Through the courtesy of newspaper owners in the city, facilities are provided for complete inspection of a newspaper plant.

Both terms, three hours. Open to Seniors, Juniors, and such Sophomores as have shown special ability in writing. ROUTH

FRENCH

(See under Romance Languages).

GEOLOGY

MR.———

Richardson Chemistry Building.

1. Physiography.

This course is intended to serve as an introduction to science; the following topics will be studied: the elements of physics and chemistry, and their relation to the formation and composition of the earth's crust; mountain-building and valley-making processes; volcanoes; earthquakes; the sea; dew, rain, and snow; movements of the earth and its relation to the sun, moon, and planets.

Three hours a week, recitations and lectures; and two laboratory periods of one hour each. First term.

2. Geological Materials.

The following subjects will be briefly studied: the geographical relations, occurrences, composition, and economic bearing of the

common mineral and rocks, especially those used for building; soils; clays; coals; peat; salt; sulphur; oil and gas; road material; iron; gold; silver; copper; etc.

Three hours a week, recitations and lectures; and two laboratory periods of one hour each. Second term. Open to all students who have studied the elements of chemistry or physiography.

3. Principles of Geology.

The course will consist of lectures and readings on general geology, illustrated with museum specimens, maps, and views. Special attention will be given to the processes and materials with which the engineer has to deal, such as the formation of natural levees; bars and shoals in rivers and harbors, ground waters, artesian wells, and water supply; cements, building stones, clays, road materials.

Norton, or Chamberlain and Salisbury, *Elements of Geology*.

Three hours a week, lectures and recitations; and one half-hour study of maps and specimens.

GERMAN

PROFESSOR RANSMEIER MR. VOSS

Gibson Hall, Room 33.

1. Elementary German.

Pronunciation, grammar, and exercises. Easy standard prose. The object of this course is to teach the student the fundamental principles of grammar, to write easy sentences, to read simple prose, and to understand an easy form of the spoken language.

Three hours a week. RANSMEIER, VOSS

2. Intermediate German.

Lyric poetry, and selected works of the narrative and dramatic literature of the nineteenth century. Written and oral drill. Collateral reading of simpler German for the development of speed. Selected readings in the history of German literature.

This Course presupposes the completion of Course 1.

Three hours a week. RANSMEIER

3. Scientific German.

Drill in pronunciation and rapid reading. A reader of graded selections will be followed by one or more works of recognized scientific value. Reading of articles in scientific periodicals.

This course presumes the completion of German 1.

Three hours a week. VOSS

4. Introduction to the Classical Period of the Eighteenth Century.

Lessing's *Minna von Barnhelm*, Schiller's *Wilhelm Tell*, and Goethe's *Egmont*. Collateral reading and study of the literary history of the period. Oral and written drill.

This course follows course 2. It is open, also, to students who have completed German 3.

Three hours a week. RANSMEIER

5. Nineteenth Century Narrative and Dramatic Literature.

A rapid reading course in the masterpieces of this century. Collateral reading in the history of nineteenth century literature.

This course presumes the completion of courses 1, 2, and 4, or their equivalents.

Three hours a week. RANSMEIER

6. German Conversation.

Drill in the spoken application of the vocabulary and idioms of daily life.

Open to students who have taken, or are taking, German 2 or German 3.

One hour a week. RANSMEIER

GREEK

(See under Classical Languages.)

HEBREW

PROFESSOR HELLER

Gibson Hall, Room 2.

1. Elementary Hebrew.

Reading; rudiments of grammar; translation of historical portions of the Bible.

Davidson's *Hebrew Grammar*.

Three hours a week.

2. Unpointed Hebrew.

Review of grammar; syntax; translation of prophetic and poetical portions of the Bible.

Harper's *Selections*.

Two hours a week.

The course is intended for those who wish to become acquainted with the Semitic group of languages and literatures; it is to embrace, in

due time, a study of post-biblical Hebrew, of Biblical and post-biblical Aramaic, of classical Arabic.

During the second term of 1912-13 the course was introduced to the academic department by a series of three lectures on Hebrew Language and Literature.

HISTORY AND POLITICAL SCIENCE

ASSOCIATE PROFESSOR WHITE

Gibson Hall, Room 32.

HISTORY

1. Mediæval and Modern Europe.

A general survey of European history from the German invasions of the Roman Empire to the present time.

Text-books, lectures, collateral readings.

Three hours a week. Required of Freshmen in the College of Arts and Sciences.

2. The History of Great Britain.

A general course with emphasis upon the modern period.

Text-books, lectures, collateral readings.

Three hours a week. Elective in the Sophomore year.

This course alternates with Course 3. Given in 1914-15.

3. Europe Since 1815.

This course is intended for students who wish to devote more time to modern European history than Course 1 requires.

Text-books, lectures, collateral readings.

Three hours a week. Open only to students who have taken Course 1.

Not given in 1914-15.

4. History of the United States.

Designed to meet the demand for a general course covering the whole field of United States history.

Text-books, lectures, collateral readings.

Three hours a week. Not open to Freshmen.

This course alternates with Course 5. Not given in 1914-15.

5. The United States Since 1830.

A study of the social and economic development of our country from 1830 to the present time. Special attention will be given to Southern history.

Lectures, collateral readings, and reports.

Three hours a week. Open only to students who have taken Course 4. Given in 1914-15.

POLITICAL SCIENCE

1. An Introduction to Political Science.

A general survey of the field of political science.

Text-books, lectures, collateral readings.

Three hours a week. Not given in 1914-15.

2. American Government and Politics.

A study of the origin and adoption of the constitution, a consideration of the government as carried on under that instrument, and political conditions as they are in the United States today. Considerable attention will be given to state and municipal governments.

Text-books, lectures, collateral readings, and reports.

Three hours a week. Elective in the Junior and Senior years.

This course alternates with Course 1. Given in 1914-15.

3. European Government.

A study of the constitutional organizations of the chief European countries, with considerable attention to the principal political issues in these countries.

Text-books, lectures, collateral readings, and reports.

Three hours a week. Elective in the Junior and Senior years.

Given in 1915-16.

HYGIENE

PROFESSOR WELLMAN PROFESSOR ALDRICH

MESSRS. HOWARD AND ASSISTANTS

Gibson Hall and Hutchinson Memorial

The courses in Hygiene, with which the work in Physical Education is combined, aim to promote the general health and efficiency of the student, both during his college work and throughout his subsequent career.

One of the courses in Physical Education forms part of the regular required Freshman work of the University, and is required of students in all Departments and counts towards college degrees.

The instruction in Hygiene is given from the standpoint of general biology rather than from the medical viewpoint and aims to give the student sound drill in modern scientific notions regarding the preservation of personal and public health and vitality. Elective, advanced

and laboratory courses in Hygiene are also offered. In Physical Education particular attention is paid to general carriage and physical control. Students are required to undergo a physical examination before work may be taken in the gymnasium, in order that exercises as nearly adapted as possible to individual needs may be prescribed.

18. General Hygiene.

A lecture and demonstration course in Public and Personal Hygiene from the standpoint of General Biology. The care of the body, matters of general sanitation, and a consideration of the infectious diseases will be studied. Industrial and educational hygiene, water supply and food supply, race conservation, sanitary legislation and other aspects of sanitary science will be taken up during the course.

Hough & Sedgwick, *Elements of Hygiene and Sanitation.*

One hour a week.

WELLMAN, ALDRICH, VAN WART, HOWARD

19. Laboratory Work in Hygiene.

Experiments and investigations carried on by the student to illustrate methods used in protecting personal and public health. The laboratory exercises will cover such procedures as water and milk examinations, investigation of foods, sewage disposal, water purification, the bacteria causing common infectious diseases, the principles of transmission of these diseases and devices for their control, methods of disinfection, etc.

Frost, *Laboratory Guide in Elementary Bacteriology;* Whipple, *Microscopy of Drinking Water;* Prescott and Winslow, *Elements of Water Bacteriology;* Bailey, *Sanitary and Applied Chemistry.*

Three hours a week, elective, prerequisite elementary chemistry.

WELLMAN AND ASSISTANTS

20. Proposed Four Years' Course in Hygiene and Sanitation Leading to the Degree of B. S. in Hygiene.

This course is suitable for general students or for those intending to be social workers, physical directors, sanitary inspectors, etc., and will consist of laboratory periods, field work, sanitary surveys, demonstrations, reports, conferences and lectures. The general object in view is the acquisition of a broad point of view in health matters together with expert knowledge of the methods and technic employed in the preservation of personal and public health and vitality.

Kenwood, *Public Health Laboratory Work; Reports by the Laboratory Section of the American Public Health Association;* Harrington,

Practical Hygiene; Lehmann, *Methods of Practical Hygiene; Current Journals and Publications.*

Elective; hours and credits to be arranged; prerequisite as for Course 19. WELLMAN AND STAFF

23. Practical Gymnastics.

This course takes up the exercises appropriate to the needs of male college students under the conditions met with in this University, and aims toward health, bodily development and bodily control. The equipment and space in the new gymnasium building are adequate for the instruction attempted.

One hour; required of Freshmen in the Colleges of Arts and Sciences, Technology, and Medicine. HANSON

LATIN

(See under Classical Languages).

MATHEMATICS

PROFESSOR DINWIDDIE MR. HOPKINS

ASSISTANT PROFESSOR MENUET

1. Algebra.

Infinite series, undetermined coefficients with application to infinite series and partial fractions, permutations and combinations, probability, logarithms and the elements of determinants.

Wells, *Advanced Course in Algebra.*

Five hours a week. First term. All Freshmen.

MENUET, HOPKINS

2. Plane and Spherical Trigonometry.

Theory and application of the trigonometric functions, with special attention to their periodic and related properties.

Crockett, *Plane and Spherical Trigonometry.*

Five hours a week. First term. All Freshmen.

MENUET, HOPKINS

3. Analytic Geometry.

A brief introductory course in plane analytic geometry.

Smith and Gale, *Elements of Analytic Geometry.*

Five hours a week. Second term. All Freshmen.

MENUET, HOPKINS

4. Analytic Geometry.

Elements of plane and solid analytic geometry supplemented by a brief course of lectures on special subjects. A continuation of course **3.**

Smith and Gale, *Elements of Analytic Geometry*; Charles Smith, *Conic Sections*.

Five hours a week. First term, two months. Required of Scientific Sophomores; elective for other Sophomores. DINWIDDIE

5. Differential Calculus, and

6. Integral Calculus.

Courses 5 and 6 are run continuously from the end of the second half-term to the end of the second term. The fundamental principles of the differential and integral calculus are studied, with special application to geometry and mechanics.

Granville, *Elements of Differential and Integral Calculus*.

Five hours a week. First term, two months, and second term. Required of Scientific Sophomores; elective for other Sophomores.

DINWIDDIE

7. Differential Equations.

The elements of differential equations with application to geometrical and physical problems.

Murray, *Differential Equations*; Forsyth's *Differential Equations*.

Three hours a week. Elective for Juniors and Seniors.

DINWIDDIE

MUSIC

By resolution of the Board of Administrators the courses offered in the School of Music of Newcomb College have been opened to students of the Academic Colleges for men.

For particulars see the Announcement of Newcomb College.

PHILOSOPHY

PROFESSOR SMITH

Gibson Hall, Room 4.

1. Logic.

Attention will be given to the doctrines of Judgment, of Inference, of Induction, of Hypothesis, and to the Postulates of Knowledge, as well as to logical praxis in the analysis of argumentation and the detection of fallacies.

Three hours a week. Both terms. Elective.

2. Ethics.

Herein will be comprised a careful study of the elements of the Moral Consciousness, of the development of the Moral Life, of the Nature and Authority of the Moral Standard, and of its application to the problems of practical life and particularly to modern sociologic problems.

Three hours a week. Both terms. Elective.

3. Introduction to Philosophy.

By various considerations, scientific, historical, and other, there will be shown the necessity and the reasonableness of Philosophy as an element of the general intellectual life, its problems will be defined, its outlines sketched, its methods illustrated, and its psychologic aspects carefully considered.

Three hours a week. Both terms. Elective.

4. Psychology.

The train of psychic phenomena will be studied in their general nature, their functional value for the life of man, their correspondence with physiological processes, and the system of their interrelations The question of the nature of the soul will also receive consideration.

Three hours a week. Both terms. Elective.

PHYSICS

ASSOCIATE PROFESSOR CLO MESSRS. STRONG AND LEVY

Physics Building.

1. Experimental Physics.

A descriptive course, abundantly illustrated by lecture experiments, and covering in an elementary way the whole range of physics.

Open to Freshmen and Sophomores in the College of Arts and Sciences,

(a) Lectures and recitations, three hours per week; (b) laboratory, two periods per week.

2. General Physics.

A general course including the whole subject of physics, but of a more advanced character than course 1.

Primarily for Scientific and Engineering Sophomores, but open to all other students who (1) have completed Mathematics 1, 2, 3, and who (2) are either taking Mathematics 4, 5, or have completed Physics 1.

(a) Lectures and recitations, three hours per week; (b) laboratory, two periods per week.

3. Electricity and Magnetism.

A course in a more advanced study of electricity and magnetism, and electrical measurements than that required in course 2.

Primarily for Engineering and Scientific Juniors, but open to all other students who have completed Physics 2, and Mathematics 4, 5, or their equivalents.

(a) Lectures and recitations, three hours per week; (b) laboratory, two periods per week. First term.

4. Light.

A special course in light, intended to supplement the work of course 2. Advanced experimental work in reflection, refraction, interference and polarization.

Primarily for Scientific Juniors, but open to all others who have completed Physics 2 or its equivalent.

(a) Lectures and recitations, three hours per week; (b) laboratory, two periods per week. Second term.

5. Mechanics.

This course is Mechanics 1. It is intended primarily for Engineering Juniors and is given in the College of Technology. It may be taken as a requirement in science by a student specializing in Physics in the College of Arts and Sciences.

See courses in Mechanics. First term.

6. Mechanics and Heat.

A course in mechanics, wave motion and heat, intended to follow course 5, and to supplement the work in heat given in course 2.

Open to all students who have had course 2 or its equivalent,

(a) Lectures and recitations, three hours per week; (b) laboratory, two periods per week. Given only after consultation. Part (a) may be taken without Part (b). Second term.

ROMANCE LANGUAGES

PROFESSOR FORTIER MR. FORTIER

Gibson Hall, Room 31

FRENCH

1. Elementary French: Grammar and Reading.

Frazer and Squair, *French Grammar*; Labiche and Martin, *Voyage de M. Perrichon*; De Vigny, *Le Cachet Rouge*; Fortier, *Précis de l' Histoire de France*; Fortier, *Sept Grands Auteurs du XIXe Siècle.*

Three hours a week.

2. Second Year French: Literature and Composition.

Prose composition; history of literature; classic drama; scientific reading (College of Technology); private reading of modern plays and stories (College of Arts and Sciences); dictation.

Texts. Frazer and Squair, *French Grammar, part II, Exercises*; Fortier, *Histoire de la Littérature Française*; Molière, *Le Bourgeois Gentilhomme, Le Misanthrope*, and *Les Femmes Savantes;* Corneille, *Le Cid. Polyeucte*; Racine, *Andromaque, Britannicus*; La Fontaine, *Fables*; Dike, *Scientific French Reader.*

Three hours a week.

3. Third Year French: Literature and Composition.

Review of grammar; prose composition; literature; private reading of plays and novels of the 17th and 18th centuries; dictation.

Texts: Larive et Fleury, *Troisième Année de Grammaire;* Koren, *French Composition;* Warren, *French Prose of the 17th Century*; Marivaux, *Le Jeu de l'Amour et du Hasard*; Beaumarchais. *Le Barbier de Séville*; LeSage, *Turcaret*; Hugo, *Hernani* and *Ruy Blas*; Rostand, *Cyrano de Bergerac.*

Three hours a week.

4. Fourth Year French: Literature and Composition.

History of literature; class-room and private reading of modern literature, (more particularly the Romantic School and the poets of the 19th century); essays in French on works read; dictation; 16th century French; Old French.

Pellissier, *Histoire de la Littérature Française*; Wright, *Selections from Rabelais*; Gaston Paris, *Extraits de la Chanson de Roland*; Canfield, *French Lyrics*, G. Walch, *Anthologie des Poètes Français Contemporains*; François, *Advanced French Prose Composition.*

Three hours a week.

SPANISH

1. Elementary Spanish.

Grammar; class-room reading; private reading of modern stories.

Olmsted and Gordon's *Spanish Grammar*; Isla's LeSage's *Gil Blas*; Carriòn y Vital Aza, *Zaragueta*; Alarcón, *El Capitán Veneno*; Schilling's *Don Basilio.*

Three hours a week.

2. Second Year Spanish: Literature and Composition.

Composition; class-room reading; private reading of modern dramas.

Crawford's *Spanish Composition*; Moratín, *El Si de las Niñas*;

Galdós *Doña Perfecta* and *Marianela*; Extracts from *Don Quijote*; Calderón, *La Vida es Sueño.*

Three hours a week.

3. Third Year Spanish: Literature and Composition.

Composition; class-room reading; private reading of modern poetry.

Umphrey's *Spanish Prose Composition*; Lope de Vega, *La Moza de Cántaro*; Becquer's Legends, Tales and Poems; Bretón de Los Herreros, *¿Quién es Ella?*; Ayala, *Consuelo*; Echegaray, *El Gran Galeoto*; Clark, *History of Spanish Literature.*

Three hours a week.

GENERAL INFORMATION

LIBRARY

The Tulane Library contains scientific and literary publications and is a depository of public documents; constant accessions are made to it through donations and purchase. It already contains upward of 37,000 volumes, including the collection of public documents, about 7,600 volumes.

The public libraries of New Orleans, together with the University libraries, afford excellent opportunities for research work in many directions. They are open to students of the University on the most favorable conditions.

MUSEUMS

The University Museum occupies nearly the entire third floor of Gibson Hall. The collections have been so arranged that the various branches may be studied with facility by the students of the University and the public in general. An index containing a brief reference and data of each numbered specimen of the various departments of Natural History has been prepared, and by its use any desired specimen may be located without loss of time. A copy of this index is kept in each of the administrative offices as well as the museum.

Anthropology.—This department is continually increasing in valuable material, especially of American aborigines. The curator has investigated numerous earth and shell mounds in various parts of Louisiana; and the results of his researches, consisting of pottery, stone implements, and skeletons of the mound builders, have been added to the collection. The investigations in Louisiana archæology will be continued in the future.

Zoology.—The animal kingdom is well represented and still existing gaps are filled as rapidly as time and opportunity permit. Several divisions, especially osteology and herpetology, have been greatly increased by donations and preparations made by the curator and by the students.

The Museum is indebted to Colonel George Soulé for valuable additions of osteological and wax-model preparations.

Groups of birds in their natural surroundings make the life history of a species apparent at a glance.

Botany.—The hebarium has been removed from the museum to the new Botanical department in the Richardson Memorial. While the number of plants is not large, the Flora of Louisiana is fairly completely represented by about a thousand plants of the old "Hale, Riddell, Carpenter collection," put up between 1840 and 1850, and by the collection of the present Professor of Botany, amounting to about thirty-five hundred species put up during the last ten years. Plant material of all kinds, epecially from the Gulf States, is greatly desired.

The Gustave Kohn Collection of the Natural History of Louisiana, donated to the University by the eminent scientist whose name it bears, contains about 15000 specimens of the fauna and flora of Louisiana, including most of the known species of plants and animals found within the borders of the state. It represents nearly fifty years industrious collecting on the part of the donor and forms an invaluable addition to the museum.

Palæontology and Geology.—Some 3000 fossils and casts of fossils are arranged to show the close connection of Palæontology with the sciences of Zoology and Botany on one side and Geology on the other. A series of Professor Unger's charts, illustrating the geologic periods of the earth, are placed to correspond with the contents of the nearest museum cases. Additions to the department have recently been made by exchange with the Rev. Henry H. Thomas, of New Jersey, one of the foremost workers in Geology.

Mineralogy.—The mineralogical collections now contained in a seperate hall have been rearranged. They number fully 3000 specimens of classified rocks, ores, and other minerals from various States and Territories of the Union.

Linton-Surget Hall.—The Art Museum in the Tilton Memorial Library embraces the Linton-Surget collection of works of art donated to the City of New Orleans by the late Mrs. Eustace Surget, of Bordeaux, France, and by an ordinance of the City Council placed under the charge of the Administrators of the University ; valuable historical portraits and marble statuary donated by Mrs. C. B. Surget, of Bordeaux, France; statues and other objects of art donated by Mrs. F. W.

Tilton; the loan collection of Mrs. J. L. Harris and Mrs. Samuel H. Kennedy, of New Orleans; and various bronzes, marbles, paintings, engravings, and other works of art, donated or loaned to the University.

The books, about 2000 volumes, forming a part of the Linton-Surget donation, are preserved in the library.

LABORATORIES

Art and Architecture.—The new Stanley Thomas Building contains studios for drawing and painting designed from an experience of 25 years study of local climatic conditions, and are arranged to exclude all except the strictly north light from above, and at the same time to admit air freely. There are separate studios for freehand drawing, color study, clay modeling, and a wide top-lighted hall for exhibitions; also a large studio for architectural design.

The Linton-Surget and loan collections of paintings, marbles, bronzes and art objects are extensive and valuable, and are placed to advantage in the Tilton Library.

The Newcomb Art School galleries and the Delgado Art Museum in the City Park offer varied opportunities for art study.

Astronomy.—A small working observatory has been built on the University grounds, and in it is set up an equatorial of five-inch aperture. There are also an additional telescope of five-inch aperture (portable), a universal instrument, sextants, a heliostat, and several spectroscopes, as well as a number of globes and models, and a collection of astronomical lantern slides. One of the telescopes was presented by Mr. J. R. Beckwith, of New Orleans.

Biology.—The work of the Department of Biology will be carried on for the present in the Physics Building, where several rooms, including a large general laboratory, 50 by 32 feet, and a lecture-room, are devoted to its needs. All necessary apparatus for the work of the department, such as microscopes and accessories, is provided. The organisms which occur in this region make it a rich field for investigators; the equipment of the laboratory is well adapted to the study of their microscopical anatomy, embryology, and morphology.

Botany.—The Botanical Laboratory, with which at present is associated the Laboratory of Pharmacognosy, is situated on the fourth floor of the new Richardson Memorial building. It will be supplied with all apparatus necessary for every line of work both in Botany and Pharmacognosy.

Chemistry.—All the work in chemistry pursued by the Academic, Medical, Pharmaceutical, and Dental students is now carried on in the Richardson Chemistry Building, recently remodeled and enlarged to twice its former capacity. Here, there are ample accommodations for a large number of students in every kind of laboratory work, and the building is fitted up with all necessary work-tables, hoods, sinks, and other conveniences.

There are large laboratories for general chemistry and qualitative analysis, physiological, pharmaceutical, organic, and industrial chemistry; smaller ones for quantitative analysis, physical chemistry, electro-chemistry, assaying, spectroscopy, photography, gas, water and fertilizer, and food analysis. Other rooms are devoted to research, store, preparation, offices, etc. The main auditorium seats three hundred people.

Hygiene.—The Hygienic Laboratory is, by the courtesy of the Head of the Department of Chemistry, located for the present in the Richardson Chemistry Building, where two laboratory rooms have been placed at the disposal of the Department of Hygiene. These are fitted with sterilizers, autoclave, incubator, microscopes, Kjeldahl and Wanklyn's apparatus, fuming chamber and other equipment necessary for carrying on laboratory work in sanitary science. Each student is given a complete set of locker apparatus for which he is individually responsible.

Physics.—The work in physics is carried on in the Physical Laboratory, on the Tulane campus, a spacious structure, two stories high, 125 feet long by 53 feet deep. This building, planned with great care and attention to detail, affords good facilities for physical demonstration and research. Most of the instrumental equipment of the laboratory is excellent, many of the instruments being of the most approved forms and from the best makers of this country and Europe. A well equipped work shop is in the laboratory; and a mechanician is almost constantly employed in the manufacture, repair, and modification of apparatus. Some of the most useful instruments in the collection have been made in this shop.

YOUNG MEN'S CHRISTIAN ASSOCIATION

An active and efficient Young Men's Christian Association has been in operation for two years. The Association issues a complete students' handbook, which may be obtained on application to the Secre-

tary. A clubroom is maintained, with reading tables, periodicals, etc., for the convenience of the students.

DISCIPLINE

The University is, in tone, Christian, but not sectarian. The discipline of the institution is mild but firm. The students are presumed to be cultured, and a high standard of honor and truthfulness is inculcated and maintained. Should a student prove deficient in either, or so delinquent in industry or punctuality as to offer a bad example to others, the withdrawal will be requested. Any gross breach of discipline is visited with suspension, dismissal, or expulsion.

Graduate students will be allowed the fullest freedom consistent with good order.

The regular matriculated students of the Colleges of Arts and Sciences and Technology constitute the official student body and elect a Board of Directors, to which for the past twenty-four years has been entrusted the honor system and the general discipline of the student body. This system has worked satisfactorily.

THE TULANE UNIVERSITY OF LOUISIANA

NEW ORLEANS

ROBERT SHARP, A. M., Ph. D., President.

The University, in all its departments, is located in the City of New Orleans, the metropolis of the South. There are ten Departments, with twenty-four buildings. Modern dormitories, extensive laboratories, libraries, and museums.

THE COLLEGE OF ARTS AND SCIENCES, for men, offers full courses in Literature and Science. There are many scholarships in this Department open to high school graduates.

THE COLLEGE OF TECHNOLOGY offers unexcelled four-year courses in the following schools: Mechanical-Electrical Engineering, Civil and Sanitary Engineering, Chemistry and Chemical Engineering, Architecture and Architectural Engineering. Two-year course in Sugar Chemistry. Small classes, ample equipment, thorough training through intimate contact with practical problems.

THE NEWCOMB COLLEGE, for women, located in Washington Avenue, in the best residential district, offers full courses in Literature, History and Science; in the *School of Art* every facility for the study and practice of industrial and fine arts, with picture galleries and an art library; in the *School of Music* superior facilities for the study of Music in all its branches; in the *School of Household Economy* professional, special and elective courses in Domestic Science and Domestic Art and in the *School of Education*, special training for prospective teachers of high and elementary schools. A complete Psychological Laboratory is in close affiliation with the work in Education and other Schools.

THE FACULTY OF GRADUATE STUDIES, open to graduates of approved colleges, offers advanced courses leading to the degrees of A. M., M. E., C. E., and Ph. D. A number of Fellowships are awarded annually.

THE LAW DEPARTMENT offers two complete three-year courses, each leading to the degree of Bachelor of Laws; one to prepare students for practice in Common Law States, the other to prepare students for practice in Louisiana.

THE COLLEGE OF MEDICINE, Embracing:

THE SCHOOL OF MEDICINE, established in 1834, with unexcelled laboratory and clinical advantages, offers a five-year course to High School graduates.

THE POST-GRADUATE SCHOOL OF MEDICINE, established in 1888, as the New Orleans Polyclinic. Graduate courses offered in all fields of medicine, including research.

THE SCHOOL OF HYGIENE AND TROPICAL MEDICINE offers short courses in public health and tropical medicine. Regular courses for degrees, of D. P. H. and D. T. M. H., etc.

THE SCHOOL OF PHARMACY, established in 1838. Degrees of Ph. G. (2 years), Ph. C. (3 years), and Pharm. D. (4 years), offered. Women admitted on same terms as men.

THE SCHOOL OF DENTISTRY, (formerly New Orleans College of Dentistry), offers a full three-year course leading to the degree of D. D. S., with practically unlimited clinical material.

For special circulars or for detailed information, address the Deans of the respective departments. For General Register of the University, address,

SECRETARY OF THE TULANE UNIVERSITY OF LOUISIANA,
Gibson Hall, New Orleans.

REGISTRATION

On the appointed registration days in September, January, and March, announced on the Bulletin Board, each student must obtain a card of admittance *in person* at the Secretary's office. This admit card is issued to the student upon payment of his fees and must be presented to the instructor in charge of each class in which the student is enrolled. Students may register during the week after the appointed Registration Day, upon payment of a special fee of two dollars; during the week following, the fee for late registration will be four dollars; after that the fee will be increased one dollar for each week's delay.

METHODS OF ADMISSION

Applicants for admission to the Freshman Class of the Academic Colleges must be not less than sixteen years of age. They shall report to the Dean of the Academic Colleges at least one day before the time set for the Entrance Examinations, in order that they may be properly instructed. (For detailed information as to Entrance Requirements, see Requirements for Admission).

I. AS REGULAR STUDENTS

1. **By Examination.** Students desiring to enter the Freshman Class, by examination, will be required to pass the necessary number of units as outlined under Requirements for Admission.

2. **By Certificate.** From certain affiliated schools students are received on certificate. Such certificate should state in detail the studies pursued by the student, the time devoted to each study and the work actually done, with a general recommendation for conduct and studious habits. This certificate will be accepted only in so far as it conforms with the revised entrance requirements. Students entering from affiliated schools must obtain from the Secretary of the University the printed form of certificate required.

A student will be registered as a regular member of a class if he does not omit more than one of the required subjects of that class, and if he, with this exception, fulfils the normal requirements of that class.

II. AS SPECIAL STUDENTS

Applicants of the requisite age may be admitted as special students without examination, provided they give evidence of ability to do creditable special work in the University and are recommended to the

faculty concerned by the professor in charge of the department of study in which they desire to take a large part of their work. In order to enter without examination, they must be at least twenty years of age. Should they prove, after admission, to be unable to profit by the work undertaken or to be neglectful of their work, they will be required to drop back into a lower class or to withdraw. In the College of Arts and Sciences, special students may, at the discretion of the Dean, be required to stand the entrance examination in English. In all of the Colleges, such special students are subject to the same regulations in regard to number of hours, class-room work, and examinations as students in the regular courses.

A special student must successfully complete at least one-half of the work undertaken each term. Otherwise he shall be dropped for deficiency and may enter again only by passing the entrance examinations or by certificate from an affiliated school.

Special students, entering without examination or certificate, will be required to satisfy all entrance requirements before they may become regular.

The privilege of becoming a special student should be sought only as a last resort, since the full course is necessary for satisfactory results.

ADVANCED ADMISSION CREDIT

Any student who enters with more than fifteen (15) units may receive credit toward graduation for his entrance subjects, provided such entrance subjects are also university subjects, and are successfully continued in the University within two years after matriculation, and provided the student's general University record has given proof of superior scholarship. In general, two hours of University credit may be given for each extra entrance unit.

Application for such University credit must be made within one year after matriculation. Entrance units offered after matriculation may be used only for the purpose of making up entrance deficiencies.

ADMISSION TO ADVANCED STANDING

1. **By Examination.** Students desiring to enter any class higher than the Freshman will be examined on all the subjects previously studied by the class which they desire to enter.

2. **From Other Colleges.** Students bringing certificates from the proper officers of other colleges of satisfactory grade may be

credited, at the discretion of the Faculty, with the work actually done elsewhere. Students entering from other colleges must obtain from the Secretary of the University the printed form of certificate required.

Advanced standing for work done before matriculation will be given when extra entrance subjects may be so applied.

Application for advanced standing on the basis of work done before entering the University must be made within two years after matriculation.

AMOUNT OF WORK

Sixteen hours a week of recitations, lectures, or laboratory work constitute an average term's work, a laboratory period of two hours counting as one hour toward graduation. No student may carry more than eighteen nor less than fifteen hours without special permission from the Faculty.

EXAMINATIONS AND GRADES

At the end of each term an examination is held in each study pursued by the student. Seventy per cent is required on each examination for passing, and the examination mark, with the marks for the daily work, determine a student's grade for the term. The general average of these marks must be over seventy per cent. These grades fix the status of the student for the term in his several studies and are sent to parents.

On reports sent out to parents, students are graded as follows, in each subject: *A*, from 95 to 100 per cent; *B*, from 90 to 94; *C*, from 80 to 89; *D*, from 70 to 79; *E*, below 70 per cent, or deficient.

REMOVAL OF CONDITIONS

Students admitted to partial standing in the Freshman class may remove their entrance conditions

(1) by completing before graduation, in addition to the work required for a degree, elementary courses in the University corresponding to and sufficient to cover the entrance units lacking; or,

(2) by passing entrance examinations in the additional subjects necessary, provided such examinations are passed within one year after admission to the University.

No one may be admitted to Senior standing who has any entrance condition still unremoved.

Any student who absents himself from class work and from the regular examinations will not be permitted to make up the subject by taking a condition examination.

A student whose term grade in any subject is less than 45 per cent. will not be re-examined but must take the subject over with the next lower class.

In the event of a conflict in the schedule in required subjects, a student may, at the discretion of the Dean, remove the condition under the instruction of an instructor approved by the Department concerned.

In case of non-required subjects, and for reasons satisfactory to the Dean and both professors concerned, a student may be allowed to substitute another subject of equal difficulty.

A student whose term grade in any subject lies between 70 and 45 per cent. shall have two opportunities, and no more, for the removal of the condition by examination.

Regular examinations for students conditioned in First Term subjects will be held at the end of the Second Term of that session and just before the beginning of the First Term of the succeeding session.

Regular examinations for students conditioned in Second Term subjects will be held just before the beginning of the First and Second Terms of the succeeding session.

Conditioned students absent from the regular condition examination must present an excuse satisfactory to the professor in charge of the subject or receive a zero for the examination. When an excuse has been accepted a special examination will be held for which a fee of Two Dollars will be charged, payable to the Secretary. The time for such an examination must be arranged by the student with the professor in charge, and before taking the examination the student must obtain a permit from the Dean and the Secretary's office. This permit must be presented to the professor holding the examination.

A condition must be removed before the beginning of the corresponding term of the following year, otherwise the student must repeat the course.

Opportunity being offered for the removal of conditions before the beginning of each term, any student having six Term conditions at the beginning of the Academic Year will be required to take the class over with the exception of subjects in which he obtained 80 per cent.

or over. Permission to take any advanced work must be obtained from the Dean and the professors concerned.

No student with more than two term conditions may be permitted to register as a member of the next higher class but shall be considered a member of the same class as the year before, until the number of his unremoved conditions shall not exceed two.

In the case of members of the Senior class only one re-examination will be held; the time for said examination being arranged between the professor in charge and the students to be examined. A conditioned senior absent from the regular condition examination must follow the procedure above for the lower classes.

No condition examination will be given Seniors after the Saturday before Commencement.

A Senior who fails to pass for graduation with his class shall have the privilege of standing his examinations at the opening of the next session, and, if successful, his degree will be conferred at the following commencement.

REQUIREMENTS FOR GRADUATION

The baccalaureate degrees are conferred in May of each year upon students of the College of Arts and Sciences and the College of Technology who have fully satisfied the following requirements:

1. **Required Courses:** the completion of all definitely required courses. College of Arts and Sciences, pages 11-13. College of Technology, pages 15-20.
2. **Elective Courses:** in the College of Arts and Sciences only, the completion of thirty hours of elective work, as provided on page 13.
3. **Diploma Fee:** the payment of $5 to cover cost of diploma.

ATTENDANCE

Attendance must be regular and prompt. Students are expected to be in their seats at the beginning of the hour.

A student who absents himself from any class or laboratory exercise is given a mark of zero for that day, unless, for satisfactory reasons, he be excused for the absence. Generally speaking, the only satisfactory reasons for absence are serious sickness on the part of the student himself or of some member of his immediate family, and religious holidays.

Absences are to be excused only by the instructor in charge. Excuses for absence must be presented by the student on the Tuesday following the week in which he was absent, except when his absence extends beyond that limit; otherwise the absence shall remain unexcused. Students who are to be absent from the University in athletic, forensic, or other contests must obtain from the President or Director leave of absence in advance.

In making up the term grade, five points will be deducted from the class mark for every unexcused absence.

COURSES OF STUDY

1. COLLEGE OF ARTS AND SCIENCES

The College of Arts and Sciences offers three courses of study: the Classical and Literary Courses which lead to the degree of Bachelor of Arts; and the Scientific Course, which leads to the degree of Bachelor of Science. Each of these courses extends over four years.

These courses are substantially equivalent in the amount, proportion, and exactness of the training and instruction afforded, but differ materially in the character of their training. They are planned not so much to prepare for any special occupation or profession as to give a foundation of information, training, and general culture.

The Classical Course requires the study, for two years, of both Greek and Latin.

The Literary Course differs from the Classical Course chiefly in substituting for either Latin or Greek further study of French or German.

The Scientific Course aims to give fundamental training in the natural sciences and in mathematics. It requires neither Latin nor Greek, but, as training in language, either French or German.

An outline of the courses is given below. For detailed information on the character of work in each subject, see under Courses of Instruction.

CLASSICAL COURSE

FRESHMAN YEAR	HOURS
Latin 1	3
Greek 2	3
English 1, 3 (Composition and Rhetoric; American Literature)	3
Mathematics 1-3 (Algebra, Plane and Spherical Trig.; Anal. Geom.)	5
History 1 (Mediæval and Modern Europe)	3
	17

SOPHOMORE YEAR	HOURS
Latin 2	3
Greek 3	3
English 3, 4, 5 (Rhetoric and Composition; English Literature)	3
Chemistry 1, 2 (General Chemistry)	3
Biology 1, 2 (General Biology)	3
Physics 1 (Experimental Physics) *	3
Mathematics 4, 5 (Anal. Geom.; Diff. and Integral Calculus)	4
Botany 1, 2	3
French 1, or German 1 **	3
	15 or 16
Laboratory	2

LITERARY COURSE

FRESHMAN YEAR	HOURS
Latin 1 } Greek 1 or 2 } *	3
English 1, 2 (Composition and Rhetoric; American Literature)	3
French 1, or German 1* ‡	3
Mathematics 1-3 (Algebra, Plane and Spherical Trig.; Anal. Geom.,)	5
History 1 (Mediæval and Modern Europe)	3
	17

SOPHOMORE YEAR	HOURS
Latin 2, or Greek 2 or 3*	3
English 3, 4, 5 (Rhetoric and Composition; English Literature)	3
Mathematics 4,5 (Anal. Geom.; Diff. and Integral Calculus) } †	4
History 2 (History of England) } †	3
Chemistry 1, 2 (General Chemistry) }	3
Biology 1, 2 (General Biology) } *	3
Physics 1 (Experimental Physics) }	3
Botany 1, 2 }	3
French 2, or German 2*	3
	15 or 16
Laboratory	2

SCIENTIFIC COURSE

FRESHMAN YEAR	HOURS
Biology 1, 2 (General Biology) } Botany 1, 2 } *	3
French 1, or German 1 ‡	3
English 1, 2 (Composition and Rhetoric; American Literature)	3
Mathematics 1-3 (Algebra, Plane and Spherical Trig.; Anal. Geom.)	5
History 1 (Mediæval and Modern Europe)	3
Drawing 1 (Freehand Drawing)	1
	18
Laboratory	2

SOPHOMORE YEAR	HOURS
Chemistry 1, 2 (General Chemistry)	3
Physics 1 (Experimental Physics)	3
Mathematics 4, 5 (Analytic Geom.; Diff. and Integral Calculus)	4
English 3, 4, 5 (Rhetoric and Composition; English Literature)	3
French 2, or German 2*	3
	16
Laboratory	4

*Elect one subject.

†After the first term Literary Sophomores may discontinue Mathematics 4, 5, if they desire, and substitute History 2 (History of England).

‡Students who offer French or German as an entrance requirement will not receive credit toward graduation for French 1 or German 1 in college.

COURSES FOR JUNIOR AND SENIOR YEARS

No single course is prescribed for Juniors and Seniors in the College of Arts and Sciences. All work is open to election in all subjects offered in the Academic Colleges, provided that not more than twelve hours may be taken in any one subject. Every student must elect not less than thirty hours in the Junior and Senior years taken together, and not less than fifteen of these hours in each year. A properly prepared student may elect graduate courses in his Senior year. Elective courses will not be given to less than five persons except by special direction of the faculty and with the approval of the head of the department involved.

When scientific courses are elected, the laboratory work accompanying them is counted as one hour toward graduation for each laboratory period of two hours.

COMBINED ACADEMIC AND LAW COURSE

In order to enable earnest and ambitious students to complete the work required for their law, as well as their bachelor's degree in six years, without sacrificing or lowering the standard and quality of either degree, the Academic Faculty and the Faculty of Law have agreed upon the following course, open to students in their senior year of college work, credit for which will be allowed by both faculties:

History and Institutes of Roman Law: Three hours a week.

One Course in the Department of Economics and Political Science: Three hours a week.

One Course in French or Latin: Three hours a week.

Contracts: Three hours a week.

Torts: Two hours a week.

Property I: Two hours a week.

COMBINED ACADEMIC AND MEDICAL COURSE

In order to enable earnest and ambitious students to complete the work for both the baccalaureate and the medical degrees in seven years, the Academic Colleges will permit not more than fifteen hours of medical science, not duplicating work of the same grade already done in the Academic Colleges, to count toward the bachelor's degree.

PRE-MEDICAL COURSE FOR STUDENTS NOT CANDIDATES FOR AN ACADEMIC DEGREE

This course is to be arranged under the teaching heads of the several departments listed below; the hours of teaching to be the same as those

provided for students actually engaged in the work in these branches in the Academic and Medical Departments respectively:

BIOLOGY—1, General Biology; 2, Embryology; 3, Zoology.

BOTANY—1, Structure and Functions of Plants; 2, Morphology and History of Flowering Plants; 3, Classification and Distribution of Flowering Plants; 4, Plant Pathology; 5, Medical Botany.

PHYSICS—1, Experimental Physics; 2, General Physics; 3, Theoretical Physics; 4, Medical Physics.

CHEMISTRY—General Inorganic Chemistry.

LANGUAGES—Optional courses in Greek, Latin, German, French or Spanish may be arranged so long as the student becomes proficient in at least one of these during one term of study embraced in the college course.

II. COLLEGE OF TECHNOLOGY

The College of Technology is devoted to the higher education of young men in engineering. While emphasizing the purely technical side, due consideration is given also to culture studies. The training of this college aims to produce men of broad scholarship, capable of leadership in other than technical lines as well as in engineering.

The College of Technology offers five courses, as follows:

1. Mechanical and Electrical Engineering.
2. Civil Engineering.
3. Chemical and Sugar Engineering.
4. Architecture.
5. Architectural Engineering.
6. Science.

Each of these courses extends over four years; on the successful completion of any one of them the degree of Bachelor of Engineering in the particular course followed by the student is conferred. Graduate work is offered in each course, and on the successful completion of such advanced study the degree of Engineer is conferred. (See Graduate Department).

The **Mechanical and Electrical Engineering** course prepares students to deal intelligently with problems in the design, construction, and management of machinery, and the production and distribution of power. Work in the Departments of Electrical Engineering, Experimental Engineering, Erecting Engineering, and Mechanic Arts is included in this course.

The **Civil Engineering** course lays a broad foundation in the theoretical and practical subjects that will prepare the graduate to follow the specialties of the profession—such as railroad, road, and levee construction, construction of drainage and sewerage plants, bridge building, and general and precise surveying.

The **Chemical and Sugar Engineering** course combines a training in the principles of machinery and power production with a thorough knowledge of Chemistry. It aims to qualify young men to undertake the direction of the manufacture of cotton and other textile fabrics, oils, glycerine, soaps, paper, alcohol, fertilizers, or of any thing that will utilize our natural products.

The attention of the student is directed especially to the chemistry of sugars and other related bodies, and to the principles governing the design, proper erection, and economical management of a sugar factory and of the machinery therein contained.

The **Course in Architecture** aims to train the student in architectural design. To this end prolonged study is made of the history of ancient and modern architecture, and the work in design is corelated with this. Work in language, physics, mathematics, mechanics of materials, and practice in the various forms of drawing complete the course.

The **Course in Architectural Engineering** substitutes for some of the work in drawing and design, more work in engineering subjebts.

An outline of the courses is given below. For detailed information on the character of work in each subject, see under Courses of Instruction. (The Roman numbers, I, II, indicate the term).

SCIENCE COURSE

FRESHMAN YEAR †	I	II
English 1, 2 (Composition and Rhetoric; American Literature)	3	3
Modern Language	3	3
Mathematics 1-3 (Algebra, Plane and Spher. Trig.; Anal. Geom.)	5	5
Physics 1 (Experimental Physics) - - ‡	6	6
Chemistry 1, 2 (General Chemistry) - ‡		
Botany 1, 2*; Zoology 1, 2** - - - - ‡		
Laboratory	4	4
	21	21

*First Term only. **Second Term only.
‡Elect two.
†Course for Sophomores, Juniors, and Seniors is now under consideration.

MECHANICAL AND ELECTRICAL ENGINEERING COURSE

FRESHMAN YEAR	I	II
English 1, 2 (Composition and Rhetoric; American Literature)	3	3
Modern Language	3	3
Mathematics 1-3 (Algebra, Plane and Spherical Trigonometry, Analytic Geometry	5	5
Chemistry 1 (General Chemistry)	3	3
Chemistry 2, 3 (General Chem. Lab'y; El. Qual. Anal.	2	2
Drawing 1, 2 (Freehand and Mechan. Drawing	3	3
Mechanic Arts 1, 3, (Carpentry and Wood Turning; Pattern Making and Foundry Work)	2	2
Mechanic Arts 2, 4 (Technical Instruction)	1	1
	22	22
SOPHOMORE YEAR		
English 3, 4, 5 (Rhetoric and Composition; English Literature)	3	3
Modern Language	3	3
Mathematics 4, 5 (Anal. Geom., Diff. and Integral Calculus)	5	5
Physics 2 (Mechanics and Heat)	..	3
Chemistry 6 (Technical Analysis)	2	..
Civil Engineeing 5 (Surveying)	..	2
Descriptive Geometry	4	..
Mechanic Arts 5, 6 (Forging and Tool Making; Machine Tool Work	3	3
Mechanic Arts 7 (Technical Instruction)	1	1
	21	20
JUNIOR YEAR		
Physics 3 (Electricity and Magnetism, Sound and Light)	3	3
Physics 4 (Physical Laboratory)	3	3
Mechanical Engineering 1, 2 (Mechanics of Materials; Graphical Statics)	3	4
Machine Design 1, 2	..	5
Experimental Engineering 1	2	2
Mechanics 1	3	..
Electrical Engineering 1 (Dynamo Electric Machinery)	..	2
Kinematics of Machinery 1	3	..
Kinematic Drawing 2	3	..
Mechanic Arts 8 (Advanced Machine Tool Practice)	1	1
Mechanic Arts 9 (Technical Instruction)	1	1
	22	12
SENIOR YEAR		
Mechanical Engineering 3, 4, 5 (Steam Engine; Steam Engine Design; Valves and Links)	5	..
Mechanical Engineering 6 (Steam Boilers)	2	..
Mechanical Engineering 7 (Machine Design)	..	2
Mechanical Engineering 9, 10 (Steam Power House Design)	..	5
Elect. Engineering 2, 3 (Dyn. Elect. Mach.; Elect Systems)	3	3
Elect. Engineering 4 (Electrical Engineering Laboratory)	3	3
Experimental Engineering 2	3	3
Hydraulics 1 (Hydrostatics and Theoretical Hydraulics)	..	4
Elective	3	3
	19	23

CIVIL ENGINEERING COURSE

FRESHMAN YEAR	I	II
English 1, 2 (Composition and Rhetoric; American Literature)	3	3
Modern Language	3	3
Mathematics 1-3 (Algebra; Plane and Spherical Trigonometry; Anal. Geometry)	5	5
Chemistry 1 (General Chemistry)	3	3
Chemistry 2, 3 (General Chem. Lab'y; El. Qual. Anal.	2	2
Drawing 1. 2 (Freehand and Mechanical Drawing)	3	3
Mechanic Arts 1, 3 (Carpentry and Wood Turning; Pattern Making and Foundry Work)	2	2
Mechanic Arts 2, 4 (Technical Instruction)	1	1
	22	22
SOPHOMORE YEAR		
English 3, 4, 5 (Rhetoric and Composition; English Literature)	3	3
Modern Language	3	3
Mathematics 4, 5 (Anal. Geom.; Diff. and Integral Calculus)	5	5
Physics 2 (Mechanics and Heat)	..	3
Chemistry 6 (Technical Analysis)	2	..
Civil Engineering 1 (Plane Surveyeng)	4	4
Descriptive Geometry	4	..
Civil Engineering 2 (Topographical Drawing)	..	2
	21	20
JUNIOR YEAR		
Physics 3 (Electricity and Magnetism; Sound and Light)	3	3
Physics 4 (Physical Laboratory)	3	3
Mechanical Engineering 1, 2 (Mechanics of Materials; Graphical Statics)	3	4
Machine Design 1, 2	..	5
Experimental Engineering 1	2	2
Mechanics 1	3	..
Civil Engineering 3, 4 (Higher Surveying; Railroad and Highway Engineeging)	6	6
	20	23
SENIOR YEAR		
Civil Engineering 6 (Masonry Construction)	4	3
Civil Engineering 7 (Bridges and Roofs)	4	..
Hydraulics 1 (Hydrostatics and Theoretical Hydraulics)	..	4
Astronomy 1	3	3
Geology 3 (Principles of Geology)	3	3
Electrical Enginrering 5 (Elements of Electrical Machinery)	..	3
Elective	3	3
	17	19

CHEMICAL AND SUGAR ENGINEERING COURSE

FRESHMAN YEAR	I	II
English 1, 2 (Composition and Rhetoric; American Literature)	3	3
Modern Language	3	3
Mathematics 1-3 (Algebra; Plane and Spherical Trigonometry; Anal. Geometry)	5	5
Chemistry 1 (General Chemistry)	3	3
Chemistry 2, 3 (General Chem. Lab'y; El. Qual. Analysis)	2	2
Drawing 1, 2 (Freehand and Mechanical Drawing)	3	3
Mechanic Arts 1, 3 (Carpentry and Wood Turning; Pattern Making and Foundry Work)	2	2
Mechanic Arts 2, 4 (Technical Instruction)	1	1
	22	22
SOPHOMORE YEAR		
English 3, 4, 5 (Rhetoric and Composition; English Literature)	3	3
Modern Language	3	3
Mathematics 4, 5 (Anal. Geom.; Diff. and Integral Calculus)	5	5
Physics 2 (Mechanics and Heat)	..	3
Chemistry 4, 5 (Qualitative and Quantitative Analysis)	1	1
Chemistry 4, 5 (Chemical Laboratory)	3	3
Civil Engineering (Surveying)	..	2
Descriptive Geometry	4	..
	19	20
JUNIOR YEAR		
Physics 3 (Electricity and Magnetism, Sound and Light)	3	3
Physics 4 (Physical Laboratory)	3	3
Chemistry 7 (Organic Chemistry)	3	3
Chemistry 8 (Organic Chemistry Laboratory)	2	2
Chemistry 9. 10 (Theoretical and Physical Chemistry)	3	3
Mechanical Engineering 1, 2 (Mechanics of Materials; Graphical Statics	3	4
Machine Design 1, 2	..	5
Experimental Engineering 1	2	2
Mechanics 1	3	..
	22	25
SENIOR YEAR		
Chemistry 11 (Industrial and Sugar Chemistry)	5	5
Chemistry 12 (Industrial Chemical Laboratory)	5	5
Chemistry 13 (Electro-Chemistry)	2	..
Mechanical Engineering 3, 4, 5 (Steam Engine; Steam Engine Design; Valves and Links)	5	3
Mechanical Engineering 6 (Steam Boilers)	2	..
Mechanical Engineering 7 (Machine Design)	..	2
Mechanical Engineering 8 (Sugar House Machinery)	2	..
Mechanical Engineering 9, 10 (Steam Power House Design)	..	2
Electrical Engineering 5 (Elements of Electrical Machinery)	..	3
Erecting Engineering 1	..	3
	21	23

ARCHITECTURE COURSE

	I	II
FRESHMAN YEAR		
Mathematics 1 (Algebra; Plane and Spher. Trig.; Anal. Geom.)	5	5
English 1, 2 (Composition and Rhetoric; American Literature)	3	3
Modern Language	3	3
Architectural Drawing 1, 2 (Cast Drawing)	2	1
Architectural Drawing 3, 4 (Freehand Perspective)	2	1
Architectural Drawing 5 (Elementary Water Color)	2	..
Architectural Drawing 6 (Instrumental Drawing)	2	..
Architectural Drawing 7 (Elementary Shades and Shadows)	..	3
Architecture 1 (Orders of Architecture)	..	3
History of Art 1 (Ancient and Classical Architecture)	1	1
	20	20
SOPHOMORE YEAR		
Mathematics 3, 4 (Anal. Geom. Diff. and Integral Calculus)	5	5
English 3, 4 (Rhetoric and Composition; English Literature)	3	3
Modern Language	3	3
History of Art 2 (Med., Renaissance and Mod. Architecture)	1	1
Arch'l Drawing 8, 9 (Freehand Drawing)	2	2
Archit'l Drawing 10 (Adv. Shades & Shadows; Instr. Perspec)	..	2
Architecture 3 (Architectural Design)	3	3
Civil Engineering 5 (Surveying)	..	2
Descriptive Geometry	4	..
Summer work: Measured drawings and notes of buildings of a classical design and twenty-five (25) sketches or six (6) weeks in architect's office.	21	21
JUNIOR YEAR		
Physics 1 (Experimental Physics)	3	3
Physics 2 (Physical Laboratory)	2	2
Mechanical Engineering 1 (Mechanics of Materials)	3	4
History of Art 3 (Civilization and Art)	1	1
Architectural Drawing 10, 11 (Water Color)	2	2
Architectural Drawing 12 (Pen Rendering)	1	1
Architectural Drawing 13 (Clay Modeling)	..	2
Architecture 2 (Working Drawings and Specifications)	2	..
Architecture 4 (Architectural Design)	8	8
Summer work: Measured drawings and notes of a building of mediæval architecture and twenty-five (25) sketches or six (6) weeks in an architect's office.	22	23
SENIOR YEAR		
Heating and Ventilating	..	2
History 4 (Government) (or Economics 1)	3	3
Civil Engineering 6 (Masonry Construction)	4	..
History of Art 4 (History of Ornament and Painting)	1	1
Architecture 6, 7 (Architectural Design)	10	12
Architecture 8 (Applied Arts Design)	2	1
Architectural Drawing 14 (Life Class)	1	1
During the Junior and Senior Years weekly lectures will be given by architects upon sanitary science, heating, lighting, contracts, foundations, and kindred subjects.	21	20

ARCHITECTURAL ENGINEERING COURSE*

	I	II
FRESHMAN YEAR		
Mathematics 1-3 (Algebra, Plane and Spher. Trig. Anal. Geom.)	4	4
English 1, 2 (Composition and Rhetoric; American Literature)	3	3
Modern Language	3	3
Architectural Drawing 1, 2 (Cast)	2	1
Architectural Drawing 3, 4 (Freehand Perspective)	2	1
Architectural Drawing 5 (Elementary Water Color)	2	..
Architectural Drawing 6 (Instrumental Drawing)	1	..
Architectural Drawing 7 (Shades and Shadows)	..	2
Architecture 1 (Orders of Architecture)	..	3
History of Art 1 (Ancient and Classic Architecture)	1	1
	18	18
SOPHOMORE YEAR		
Mathematics 4, 5 (Analytic Geom.; Diff. and Integral Calculus)	4	4
English 3, 4, 5 (Rhetoric and Domposition; English Literature)	3	3
Modern Language	3	3
Physics 2 (Mechanics and Heat)	3	..
Descriptive Geometry	..	3
Chemistry 1 (General Chemistry)	3	3
Chemical Laboratory 2	2	..
History of Art 2 (Medieval, Renaissance, and Modern Arch.)	1	1
Architecture 3 (Design)	3	3
Civil Engineering 1 (Surveying)	..	4
Summer work in an architect's office.	22	24
JUNIOR YEAR		
Physics 3 (General Physics)	4	4
Physical Laboratory	3	3
Mathematics 4 (Integral Calculus)	5	..
Mechanical Engineering 1 (Mechanics of Materials)	..	5
Modern Language	3	3
Experimental Engineering 1	1	1
History of Art 3 (Civilization and Art)	1	1
Architecture 2 (Working Drawings and Specifications)	..	2
Architecture 5 (Design)	3	3
Drawing 13 (Clay Modelng)	2	..
Summer work in an architect's or structural engineer's office.	22	22
SENIOR YEAR		
History 4 (Government)	3	..
Economics	..	3
Experimental Engineering 2	3	3
Elect. Eng. 1, 2 (Dir. & Alt. Cur. Mach.; Elect. Syst. & Install)	4	4
Electrical Engineering 3 (Dynamo Laboratory)	3	3
Civil Engineering 7 (Masonry Construction)	..	3
History of Art 4 (Ornament and Painting)	1	1
Steam Engine, Heating and Ventilating	6	2
Structural Design	3	3
	23	22

During the Junior and Senior years weekly lectures will be given by architects upon sanitary science, heating, lighting, contracts, foundations, and kindred subjects.

*A revision of the Course in Architectural Engineering is now under consideration.

COURSES OF INSTRUCTION

[*Unless otherwise indicated, each course runs through the year and is elective.*]

ARCHITECTURE

PROFESSOR (to be appointed)

INSTRUCTORS LABOUISSE, GOLDSTEIN, ANDRY, AND MACDONNELL

Gibson Hall

1. Orders of Architecture.**

Mouldings, the five orders, intercolumniation and superimposition, balusters, arcades, doors, windows, pediments, etc,

Ware, *American Vignola*.

Six studio hours a week. Second term. Freshmen.

MACDONNELL

2. Working Drawings and Specifications.**

A practical study of the number and character of detail drawings for building construction in wood, brick, terra cotta, stone, steel, cement, etc.

Four studio hours a week. Second term. Juniors.

ANDRY

3. Architectural Design.

Exercises in application of elementary architectural forms to small problems in design.

Six studio hours a week. Sophomores.

LABOUISSE, GOLDSTEIN

4. Architectural Design.

Sixteen studio hours a week. Juniors in Architecture.

LABOUISSE, GOLDSTEIN

5. Architectural Design.

Sixteen studio hours a week. Juniors in Architectural Engineering.

LABOUISSE, GOLDSTEIN

6.* Architectural Design.

Twenty studio hours a week. First term. Seniors in Architecture.

LABOUISSE, GOLDSTEIN

7. Architectural Design.**

Twenty-four studio hours a week. Work on thesis. Second term. Seniors in Architecture

LABOUISSE, GOLDSTEIN

8. Applied Arts Design.

Designing for the arts of interior decoration, as fresco, mosaic, furniture, hangings, etc., including use of color, historic styles, and human figure.

Four studio hours a week, First term, and two studio a week, Second Term. Seniors in Architecture.

W. WOODWARD

The course in Design constitutes the crowning work of the curriculum. It is conducted by means of a progressive series of problems beginning during the second year of study, and culminating in the graduating thesis. The problems are of two kinds: major problems, and minor or sketch problems. Each problem is given out by the instructors in Design in the form of a program, the major problems occupying from two to six weeks, the minor problems or sketches from one to six days.

ARCHITECTURAL DRAWING

PROFESSOR W. WOODWARD

INSTRUCTORS ALLISON OWEN, ELEANOR WOODWARD, P. GHILONI

Gibson Hall

1.* Drawing from the Cast.

A series of progressive exercises in pencil from casts of ornament, in accented and shaded drawings, to impart skill of hand and a working knowledge of the best forms in classic, medieval, and Rennaissance art.

Four studio hours a week. First term. Freshmen.

ELEANOR WOODWARD

2. Drawing from the Cast.**

A continuation of course 1 into advanced work.

Two studio hours a week. Second term. Freshmen.

W. WOODWARD, ELEANOR WOODWARD

3*. Freehand Perspective.

A knowledge of the elements of drawing is assumed, and the pupil is taught to apply the laws of perspective to the representation of objects in freehand work, with a gradual application of shading with the pencil to the accented outline, in order to form an artistic individual style in pencil rendering and sketching.

Four studio hours a week. First term. Freshmen.

ELEANOR WOODWARD

4. Freehand Perspective.**

Continuation of course 3 into sketching from buildings.

Two studio hours a week. Second term. Freshmen.

W. WOODWARD, ELEANOR WOODWARD

5.* Elementary Water Color.

The study of color is introduced into the pupil's work from the first to develop what will prove a most valuable faculty to an architect. Studies are made from foliage and flowers and some attention is paid to rendering skies, landscapes, and buildings.

Four studio hours a week. First term. Freshmen.

ELEANOR WOODWARD

6.* Instrumental Drawing.

A course preparatory to the Orders of Architecture and Shades and Shadows in the second term. Projections and intersections of solids, with development of surfaces.

Edminster, *Architectural Drawing*.

Four studio hours a week. First term. Freshmen.

OWEN

7. Elementary Shades and Shadows.**

A course to accompany the Orders of Architecture and to furnish the pupil with the knowledge required in casting shadows on architectural drawings.

Six studio hours a week. Second term. Freshmen.

W. WOODWARD

8.* Freehand Drawing.

Work in charcoal and pencil from casts of details of human figure, followed by work from heads of plaster, marble, and bronze in the art collections of the University.

Four studio hours a week. First term. Sophomores in Architecture. W. WOODWARD

9. Freehand Drawing.**

Continuation of course 8, into work in full length from statues in the art collections.

Four studio hours a week. Second term. Sophomores in Architecture. W. WOODWARD

10. Advanced Shades and Shadows and Instrumental Perspective.**

Mc Goodwin, *Shades and Shadows*.

Four studio hours a week. Second Term. Sophomores.

OWEN

11.* Water Color.

A serious study of the harmony of color by exercises in painting

from still life and landscape, by criticisms, and examinations of exhibitions.

Four studio hours a week. First term. Juniors in Architecture.

W. Woodward, Eleanor Woodward

12. Water Color.**

Continuation of course 10, with special attention to rendering buildings in color.

Four studio hours a week. Second term. Juniors in Architecture.

W. Woodward, Eleanor Woodward

13. Pen Rendering.

A course of weekly criticisms of problems in rendering architectural work in pen and ink.

One studio hour a week. Juniors in Architecture.

Owen

14.* Modeling in Clay.

A course of modeling in clay to develop the ability to present ornament in low and high relief and to cast in plaster of Paris.

Four studio hours a week. First term. Juniors.

Ghiloni

15. Life Class.

Drawing of human figure with charcoal, pencil, and pen to develop the sense of proportion and balance, and to increase power in graphic expression.

Two studio hours a week. Seniors in Architecture.

W. Woodward

BIOLOGY

Associate Professor Beyer

Physics Building

1. General Biology.

The fundamental laws and principles of nature, the origin and development of organic forms, and the factors of evolution are discussed. Study of types from the simplest to the most complex, is then taken up, emphasis being laid upon the tracing of life-histories and the evolution from type to type. The first term is devoted to Botany, the second to Zoology. The course concludes with comparative vertebrate morphology, and man's position in the system.

Campbell, *The Evolution of Plants;* Parker and Haswell, *Manual of Zoology.*

Three hours a week.

2. Biological Laboratory.

Preliminary instruction is given in laboratory methods and the use of the compound microscope. The more important forms discussed in text and lecture are then studied in detail.

There will be no text-book; guide sheets outlining the work will be issued by the instructor.

Four hours a week. Required of all that take Course 1.

3.* Embryology.

An introduction to the processes of development in plants and animals. The course is comparative throughout, and presents embryology in its function of determining phylogeny.

Text-book: Foster and Balfour, *Elements of Embryology.*

Three hours a week. First Term. Open to all that have completed Course 1, or its equivalent.

4.* Embryological Laboratory.

The student will be required to follow and explain in detail the ontogeny of type specimens of plants and animals.

Four hours a week. Required of all that take Course 3.

5. Human Anatomy and Physiology.

While not as exhaustively treated as in the medical courses, a thorough foundation of the subjects, nevertheless, is laid. Particular emphasis is given to the origin and development of the various structures and functions of the human body, by comparison with those of the lower forms of animal life.

Martin, *Human Body.*

Three hours a week.

6. Physiological Laboratory.

The work in the laboratory follows the lecture course.

Four hours a week. Required of all who take course 5.

7. Entomology, Bacteriology, and Parasitology.

The subjects in this course are especially adapted to students intending to enter the medical profession. In the first part the structure and life histories of all orders of insects which may or do enter into direct relation with man or animals by their agency in disease transmission, are especially studied. The second part, Bacteriology, consists of a comprehensive course of lectures on bacterial life and development. The third part, Parasitology, is devoted to the study of the life history of animal parasites.

Three hours a week. Open only to those who have completed courses 1 to 6.

Abbott, *Principles of Bacteriology;* Jordan, *General Bacteriology.*

8. Bacteriological Laboratory.

In the laboratory the student will be taught entomological dissection, the preparation of microtome material, cleaning and sterilization of bacteriological glassware, the preparation of culture media, culture and staining methods of bacteria, etc.

Six hours a week. Required of all that take course 7.

Archinard, *Bacteriology*.

9. Theoretical Biology.

In the First Term the science is studied historically, tracing the origin and development of the more important questions that confront the biologist to-day. In the Second Term the answering theories are explainecl and discussed in some detail.

Text-book: Osborn, *From the Greek to Darwin*. Collateral reading of Darwin, Wallace, DeVries, Weismann, Haeckel, and others.

Three hours a week. Open to all that have completed Courses 1 to 8, or their equivalents.

10. Biological Laboratory.

The work will follow the lecture course and will deal largely with cytology.

Four hours a week. Required of all that take Course 9.

BOTANY

PROFESSOR COCKS

1.* **A General Introductory Course** comprising the study of the structure and functions of the different plant organs and their relation to their environment.

Two lectures and three laboratory periods a week. First term.

2.** **A Study of Special Types** beginning with the simplest and advancing to the most complex. There will also be some work in description and classification of the local flora.

Two lectures and three laboratory periods a week. Second term.

This course, together with course 1, is intended to furnish a preliminary survey of the whole subject and is a prerequisite to any other course.

3.* **The Morphology, Classification, and Life History of Mosses and Ferns.**

Two lectures and three laboratory periods a week. First term.

4.** **The Morphology, Classification, and Life History of Algae and Fungi.**

Two lectures and three laboratory periods a week. Second term.

5. **Plant Physiology and Ecology.** This will include the study of nutrition, irritability, growth, etc.; plant formations, aggregation and migration, competition and ecesis, invasion and succession, alteration and zonation, etc.

Two lectures and three laboratory periods a week.

CHEMISTRY

PROFESSOR METZ — ASSOCIATE PROFESSOR CALDWELL

PROFESSOR WILKINSON — DR. KLEINER

MR. MACDONALD

Richardson Chemistry Building.

1. General Chemistry.

Lectures, demonstrations, and recitations, involving general principles, laws of chemical combination, and a description of the elements and their important compounds.

Smith, *General Chemistry for Colleges.*

Three hours a week. Technology Freshmen, A. and S. Scientific Sophomores; elective for all other A. and S. Students.

2.* General Chemistry Laboratory.

Introductory practice for the purpose of familiarizing students with the appliances, methods of manipulation, and processes of the laboratory.

Smith and Hale, *Laboratory Outlines of General Chemistry.*

First term.

3. Elementary Qualitative Analysis.** Second term.

Four hours a week. Courses 2 and 3 are required of all who take course 1.

4.* Qualitative Analysis. First term.

5. Quantitative Analysis.** Second term.

Newth, *Manual of Chemical Analysis, Qualitative and Quantitative.*

One hour recitation, six hours laboratory practice. Courses 4 and 5 are required of all Chemical and Sugar Engineering Sophomores, and Scientific Sophomores specializing in Chemistry. Elective for all A. and S. students who have completed courses 1, 2, and 3.

6.* Technical Analysis for Engineers.

Exercises in the technical analysis of solid, liquid, and gaseous fuels, together with the determination of their calorific values; of flue

gases; of waters, together with a study of methods of water softening; of metals and alloys; and other materials of engineering.

Four hours a week. First term. M. and E. E. and C. E. Sophomores.

7. Organic Chemistry.

Remsen, *Introduction to the Study of the Carbon Compounds.*

Three hours a week. Chemical and Sugar Engineering Juniors and Scientific Juniors specializing in Chemistry. Elective for all others who have completed courses 1 and 2.

8. Organic Chemistry Laboratory.

Preparation and analysis of typical organic compounds.

Cohen, *Practical Organic Chemistry.*

Four hours a week. Required of students who take course 7.

9. Theoretical and Physical Chemistry.

A study of the laws of chemical combination; the properties of gases, liquids, solids; solutions; thermo-chemistry; electro-chemistry; photo-chemistry; chemical dynamics and statics.

Jones, *Elements of Physical Chemistry,*

Three hours a week. Chemical and Sugar Engineering Junors and Scientific Juniors specializing in chemistry. Elective for all others who have taken courses 1, 2, and 3, and are sufficiently prepared in physics and mathematics.

10. Physical Chemistry Laboratory.

Findlay, *Practical Physical Chemistry.*

Four hours a week. Required of all Scientific students specializing in chemistry who are taking course 9.

11. Industrial and Sugar Chemistry.

A course of lectures on the application of chemistry to the arts, supplemented by readings and visits to factories. The course embraces the most important chemical industries, both inorganic and organic. The principles involved in evaporation, distillation, sublimation, filtration, crystallization, calcination, refrigeration, the use of fuels, and the prevention of boiler scales, are thoroughly discussed.

A study is made of the manufacture of acids, alkalies, chlorine, bleaching powder, fertilizers, cements, glass, ceramics, pigments, sulphates, cyanides, alcohols, illuminating gas, coal-tar derivatives, soap, glycerine, sugars, starch, explosives, paper, and other substances of minor importance. A study is also made of the chemistry of textile dyeing, dyestuffs, bleaching, fermentation processes, the tanning of leather, and the refining of oils (mineral, vegetable, and animal).

Thorp, *Outlines of Industrial Chemistry.*

Five hours a week. Chemical and Sugar Engineering Seniors.

12. Industrial Chemistry Laboratory.

Work in this laboratory consists of text-book study, explanatory lectures, laboratory practice in technical analytical methods, visits to factories and, to some extent, manufacturing on a laboratory scale.

Among the subjects studied are the following: Sugar Factory Methods and Products; Fermentation and Fermented Products; Textile Bleaching and Dyeing; Paints; Oils (vegetable, mineral, and animal); Soaps; Water for Sanitary and Technical Purposes; Gas: Fuels (gaseous, liquid, and solid); Iron and Steel; Agricultural Analysis (fertilizers, soils, and foods); Building Materials (clays, limestones, cements, metals, and alloys); Assaying; Tanning.

One hour lecture and nine hours laboratory practice. Chemical and Sugar Engineering Seniors.

13. Electro-Chemistry.

Lectures and recitations on the application of electricity to metallurgy and the manufacture of chemicals; laboratory practice in electrolytic methods; manufacture of bleaching liquors, oxidation and reduction processes, and the production of high temperatures.

Two hours a week. First term. Chemical and Sugar Engineering Seniors.

For courses in chemistry designed to meet the needs of students of medicine, pharmacy, and dentistry, see announcements of these departments.

CIVIL ENGINEERING

ASSISTANT PROFESSOR JONES

Engineering Building.

1. Plane Surveying.

This course is intended to familiarize the student with the use of field engineering instruments, and with the theory involved in the ordinary problems of land surveying.

Breed and Hosmer, *The Principles and Practice of Surveying, Vol. I.*

Four hours a week throughout Sophomore year for Civil Engineering students. A pass in Freshman Mathematics is a prerequisite.

2. Topographic Drawing.**

Making of maps from notes; conventional symbols.

Two hours a week. Second Term. Sophomore Civil Engineering students.

3.* Higher Surveying.

This course is intended to give the student an insight into the methods of precise surveying, and topographic and hydrographic methods.

Breed and Hosmer, *The Principles and Practice of Surveying, Vol. II.*

Six hours a week. First Term. Junior Civil Engineering students. A pass in Course 1 is a prerequsite.

The field practice for courses 1 and 2 will be such as to illustrate the principles laid down in the text-book.

4. Railroad and Highway Engineering.**

Reconnaissance, preliminary and location methods, with the theory of curves and turnouts. The computation of earthwork and cost.

Allen, *Railroad Engineering;* Searles, *Railroad Spiral.*

Six hours a week. Second Term. Junior Civil Engineering students. A pass in Course 1 is a prerequisite.

5.** A brief course in the use of instruments, intended for Mechanical Engineering students.

Twice a week. Second Term. Sophomore year.

6.* Masonry Construction.

Foundations; excavation; sheet-piling; coffer dams; caissons; concrete, plain and reinforced dams; retaining walls; arches.

Baker, *Masonry Construction.*

Four hours a week. First Term. Senior year. Civil Engineering and Architectural students.

7. Bridges and Roofs.

Theory of stresses under dead, live, and wind loads; and elementary structural design.

Merriman and Jacoby, *Roofs and Bridges*, Parts I and III.

Four hours a week, First Term; and three two-hour periods, Second Term. Senior Civil Engineering students.

This course is based on Mechanics of Materials (see under Mechanical Engineering) and a pass in that subject is prerequisite.

CLASSICAL LANGUAGES

PROFESSOR MILLER ASSISTANT PROFESSOR BECHTEL,
MR. STRAUSS, MR. BERRY, MR.————
Gibson Hall, Rooms 1, 2, 25, 27.

GREEK

Provision is made for those who have had no Greek before coming to the University. The Elementary Course, five hours a week

throughout the year, will fully cover the preparatory work required in Greek for admission to the Classical Course. This elementary course makes it possible for Classical students, even though entering with insufficient preparation in Greek, to complete within the four years all their required work and more; it also makes it possible for Literary students to gain in college a fair knowledge of the language, literature, and culture of Greece.

1. **Elementary Greek**: Grammar; Xenophon's Anabasis; Greek Prose Composition; Homer.

As soon as the essential forms of the noun and the verb have been mastered, the translation of the Anabasis is taken up, with thorough drill in forms and syntax; exercises in composition are required once each week. The course closes with the reading of one or two books of the Iliad.

Burgess and Bonner, *Elementary Greek*; Hadley-Allen, *Greek Grammar*; Smith, *Xenophon's Anabasis*; D'Ooge, *Greek Composition Tablet*; Liddell & Scott, *Intermediate Greek Lexicon.*

Five hours a week. STRAUSS

2. **Lysias**: Selected Orations: *Against Eratosthenes*, with a careful review of the history of the Peloponnesian War and the rise and fall of the Thirty Tyrants; *On the Sacred Olive Tree* and *Against the Grain Dealers*, accompanied by an outline study of the economics of ancient Athens. This part of the course includes also a systematic review of forms and syntax, with exercises in Greek prose composition based upon the text of Lysias.

Homer: Odyssey. This part of the course consists in the rapid reading of the Odyssey, Books I, V-XI. While the main purpose of the course is the enjoyment of Homer as poetry, it includes a more thorough study of the Homeric dialect, forms, syntax, and metres than is possible in the first year's course.

Text Books: Adams, *Lysias, Selected Speeches*; Merry, *Homer, Odyssey, I-XII.*

Three hours a week. Freshmen, Classical. Open to those who have had course 1 or an equivalent.

3. **Oratory**: Demosthenes, Olynthiacs and Philippics; Isocrates, Panegyric.

The reading of these six orations is accompanied by a systematic study of the rise and spread of the Macedonian Empire, the heroic struggle of Athens against it, and its influence upon the civilization of the world.

Drama: Sophocles, Antigone; Aristophanes, Clouds.

The second half of the year is devoted to the careful interpretation of a representative Greek tragedy and comedy as works of dramatic art; the history of the development of the Greek drama, the metres of both chorus and dialogue parts, the Greek theatre, and the method of presenting Greek plays are also studied.

Three hours a week. Sophomore Classical. Open to those who have had course 2 or an equivalent. BECHTEL, MILLER

[**4. Herodotus**; Books VI and VII.

b. **Thucydides**: Sicilian Expedition, Books VI and VII.

Three hours a week. Open to students who have completed Greek 3.]

Course 4, alternating with course 3, will not be given in 1910-11.

STRAUSS

5. Plato: Apology, Crito, and Phaedo.

Lyric Poetry: Pindar, Selected Odes; **Bucolic Poetry**: Theocritus, Bion, and Moschus.

Two hours a week. Open to all students who have completed Greek 3, or an equivalent. MILLER

LATIN

1. Cicero: Cato Major; Prose Composition.

This course includes a careful review of forms and syntax, as a preparation for more advanced work.

Virgil: Aeneid.

Introduction to Latin poetry; metres, style, and subject matter of the Latin Epic.

Gildersleeve-Lodge, *Latin Grammar;* Shuckburgh, *Cicero, de Senectute*; Miller, *Latin Prose Composition*; Bennett, *Virgil's Aeneid*, I-VI; Harper, *Latin Dictionary*.

Three hours a week. Freshmen, Classical and Literary.

BERRY

2. Livy: Selections from the First and Third Decades.

Horace: Satires and Epistles

Three hours a week. Sophomores, Literary and Classical.

BECHTEL

3. Horace: Odes and Epodes.

Cicero: Correspondence.

The aim of this course is to get from original sources a view of Cicero, his life and character, and the public life of his age, and to understand the causes of the decay of the Republic.

Terence: Phormio or Andria.

Attention is paid to early Latin forms, constructions, and metres, and to the dramatic art of the Latin comedy.

Three hours a week. STRAUSS

4. Tacitus: Agricola, and Germania.

Juvenal: Satires.

Select satires of Juvenal are read as a basis for the study of Roman life under the early Empire and the decay of public and private morals. BECHTEL

[**5. Tacitus:** Annals, I-VI.

Catullus and **Tibullus**: Selected poems.

Three hours a week.]

Course 5, alternating with course 4 will not be given in 1910-11.

[**6. Roman Law.**

An introductory outline of certain fundamental principles of Roman law, together with the reading of large portions of the Institutes of Justinian.

Open to students who have completed Latin 1 and 2, or an equivalent.

Two hours a week.] BECHTEL

Course 6, given in alternate years, will not be given in 1910-11, unless there is urgent demand.

DESCRIPTIVE GEOMETRY

PROFESSOR GREGORY MR. ROBERT

Engineering Building

1.* Descriptive Geometry.

Recitations. Two periods. GREGORY

Solution of problems on the drawing board. Two periods. ROBERT

Faunce, *Descriptive Geometry.*

Four periods a week. First term. All Sophomores in Engineering.

DRAWING

COLLEGE OF TECHNOLOGY

ASSOCIATE PROFESSOR RUGAN MR. CRESPO

Engineering Building.

1.* Free Hand Drawing.

Lettering, sketching of elementary forms, tools, and parts of machinery.

Three periods a week. First Term. Freshmen in Engineering. RUGAN, CRESPO

2. Mechanical Drawing.**

Projection, isometric and scale drawing; working drawing of objects from measurements, lettering. tracing, and blue-printing.

Three periods a week. Second Term. Freshmen in Engineering.

RUGAN, CRESPO

COLLEGE OF ARTS AND SCIENCES

PROFSSOR WILLIAM WOODWARD

Gibson Hall, Room 13.

Freehand drawing is required throughout the Freshman year in the Scientific Course both for its training value and as a language or means of graphic expression, with which a man of science should be equipped.

1. Freehand Drawing.

Exercises in drawing from plaster casts of ornament, etc., to train the eye in estimating proportion quickly and accurately and the hand in recording form in line with proper shading.

Practice in applying the laws of perspective to object-drawing with shading.

Application of color to the study of models and other objects.

One drawing each week from objects in the Museum of Natural History.

One period a week. Scientific Freshmen.

ECONOMICS AND SOCIOLOGY

PROFESSOR ALDRICH

Gibson Hall, Room 40

Juniors who are likely to elect advanced work in economics in their Senior year are strongly advised to elect Economics 1 in their Junior year.

1. Principles of Economics.

The principles of economic life are studied with constant reference to the economic aspects of legal and political problems and to the development of the United States. Certain topics of applied economics, such as the tariff, trusts, and socialism, are selected for more extended discussion in the light of these principles.

Much of the class-room work takes the form of free, oral discussion. A fundamental aim is to aid students to think, with accuracy, insight, and sound judgment, for themselves.

Seager, *Introduction to Economics*; Hadley, *Economics*; Bullock, *Selected Readings in Economics*; and parallel reading.

Three hours a week. Open to Juniors and Seniors.

2. The Growth of American Life and Character: History and Interpretation.

The aim is to widen and deepen the student's understanding of the changes going on in the environment and character of the American people.

A chronological outline of changes in the structure and spirit of American society leads to discussions of the direction and methods of social progress; of important diversities in American life, such as unlikenesses between individuals, races, sections, city and country life, and economic and social classes; of the unity which does or should underlie these diversities; and of the meaning of democracy of a democratic spirit.

Three hours a week. Open to students who have taken or are taking Economics 1.

[**3. Problems of Labor and of Industrial Organization.**

This course aims to promote understanding and sound judgment on questions of capital and labor. To this end it deals with: (a) The economic and social condition of workingmen. (b) Organized efforts to improve these conditions, such as workingmen's insurance, trade unions, profit sharing, and coöperation.

Three hours a week. Open to students who have taken or are taking Economics 1].

Omitted in 1910-11.

4. Money, Banking, and International Payments.

The principles underlying the phenomena of money and banking are sought through study of the production of the precious metals, the history of prices, and the experiences of leading countries with metallic and paper money, credit, and banking.

Three hours a week. Open to students who have taken or are taking Economics 1.

[**5. Public Finance.**

More than one half of the work deals with the subject of taxation; but some attention is given to financial administration, public debts, the budget, and selected topics in the financial history of the United States.

Three hours a week. Open to students who have taken or are taking Economics 1].

Omitted in 1910-11.

EDUCATION

ASSOCIATE PROFESSOR GWINN

Gibson Hall, Room 4.

These courses in Education are open as electives to students in the College of Arts and Sciences in the Junior and Senior years.

1. **History of Education:** Pre-Christian Education; Christian schools; scholasticism, the rise of universities and public school systems; great educational reformers.

Munroe, *History of Education.*

Three hours a week.

2. **Child and Adolescent Psychology.**

The course in general psychology is prerequisite to this course.

The course will seek to set forth the important facts concerning the nature and development of the mind during childhood and youth, with special reference to the significance of these facts for education.

Three hours a week.

3. **Principles of Education.**

This course discusses the fundamental principles of education in the light of modern scientific thought. It seeks to lay a basis for a working theory of education, and to establish a point of view from which to study the problems of school education. It gives special attention to the problem of method, the recitation, course of study, and school management.

Three hours a week.

4.* **Theory and Practice of Teaching in Elementary Schools.**

The function, the content of the course of study, and the method of teaching each of the leading subjects in the elementary schools constitute the work of this course.

Three hours a week. First term.

5.** **Secondary Education.**

This course deals with: (a) The history of the rise and development of the high school in the United States; (b) the present problems in the organization and administration of high schools.

Three hours a week. Second term.

ELECTRICAL ENGINEERING

PROFESSOR ANDERSON

Engineering Building and Physics Building

1. Dynamo-Electric Machinery.**

The fundamental principles of construction and operation of dynamos for direct and alternating current service.

Two hours a week. Second term. Physics Building. Juniors in Mechanical and Electrical Engineering Course.

2. Dynamo-Electric Machinery.

A continuation of the above course with special reference to details of design and construction.

3. Electrical Systems and Installations.

Power house equipment, transmission lines, systems of distribution, interior wiring, illumination, etc.

Three hours a week. Physics Building. Seniors in Mechanical and Electrical Engineering Course.

4. Electrical Engineering Laboratory.

Calibration of instruments, operation and characteristics of various types of electrical machinery, efficiency tests, etc.

Three periods a week. Engineering Building. Seniors in Mechanical and Electrical Engineering Course.

5. Elements of Electrical Engineering.**

A special course to cover the needs of students in Civil and Chemical Engineering. A portion of the time is given to lectures and recitations and a portion to practical work in the laboratory.

Three hours a week. Second term. Physics and Engineering Buildings. Seniors in Civil and Chemical Engineering Courses.

6. Electives.

Courses dealing with special phases of Electrical Engineering will be offered as electives for the Senior year. The particular subject to be offered will be decided by consultation between students and instructor.

ENGLISH

PROFESSOR SHARP — *Gibson Hall, Room 39.*

ASSISTANT PROFESSOR BROWN — *Gibson Hall, Room 24.*

1. Composition and Rhetoric; American Literature.

The purpose of this course is to awaken and cultivate the creative power, and, by the study of selected literature and frequent practice in

writing, to develop an accurate and effective power of expression and to instill a taste for good reading.

Recitations; daily themes on assigned subjects, popular and literary, corrected and discussed. Fortnightly compositions, descriptive, narrative, expository, argumentative, corrected and criticised.

Two hours a week. All Freshmen. BROWN

2. **American Literature**: its history and relation to national life and society. Assigned readings.

One hour a week. All Freshmen. BROWN

3. **Rhetoric and Composition. Nineteenth Century English Prose**: recitations; fortnightly compositions corrected and criticised. Assigned readings. BROWN

4. **History of the English Language.**

A course in the growth and present use of English. Assigned readings.

Two hours a week, first term; one hour a week, second term. All Sophomores. BROWN

5. **English Literature**: history and development; reading of selections from 17th, 18th, and 19th centuries.

Two of Shakespeare's plays; selected prose as parallel reading.

One hour a week, first term; two hours a week, second term.

All Sophomores. SHARP

6. **Selected Poetry and Prose of the Eighteenth and Nineteenth Centuries,** especially fiction and essays; selected dramas of the Elizabethan period; appreciations and reports corrected and discussed.

Three hours a week. SHARP

7. **Practice in the Preparation and Delivery of Oral Arguments.**

Selected orations and arguments will be read and discussed. Formal debates will be held every two weeks. Each student will be required to take a leading part in the debate at least four times during the session, submitting each time a carefully prepared brief. Students will be expected to speak frequently from the floor, thus gaining practice in impromptu debating. Specimens of argumentation will be studied and made a basis of practice in brief-writing. Professor Aldrich will assist in conducting these debates.

8. **English Poetry of the Latter Part of the Nineteenth Century; or a course in Chaucer.**

Three hours a week. SHARP

ERECTING ENGINEERING

ASSOCIATE PROFESSOR RUGAN

Engineering Building.

1.** This course deals with the construction and erection of machinery and structural work and with the management of men. It includes the planning and construction of a sugar house to secure the most economical manufacture of its products, as well as convenience in its management. The processes of sugar manufacture and the arrangement of the various apparatus and their connections to secure the most efficient results are carefully reviewed. To this end, a complete drawing of a sugar house, showing all the apparatus and connections, is produced. Lectures are given on the laying out of foundations, the superintendence of their erection, as well as the erection of the various apparatus in place ready for operation, the care necessary to operate each, and the proper distribution and handling of the labor needed in their operation. Approved methods of laying by a sugar house at the end of the grinding season are also studied.

Three periods a week. Second Term. Seniors in Chemical and Sugar Engineering.

EXPERIMENTAL ENGINEERING

PROFESSOR GREGORY MR. ROBERT

Engineering Building

1. Experimental study of iron, steel, and other metals, woods, cements, etc.; tests in tension, compression, torsion, and cross bending; calibrations of gages, indicator springs, thermometers, planimeters, nozzles, Venturi meter, weirs, water meter, hydraulic rams, and transmission dynamometers; indicator practice, efficiency of engines and small machines, flue-gas analysis, the determination of the heat value of illuminating gas, fuel oil, and coal.

Carpenter, *Experimental Engineering*.

One laboratory period and one lecture a week. Engineering Juniors.

2. Valve setting of slide valve and Corliss engines, experimental study of efficiency and economy of steam, gas, and hot air engines, steam turbine, air compressor, boilers, pumps of various types, injector, steam calorimeters, condenser, etc. Viscosity, density, flash point, and coefficient of friction of lubricating oils. Tests of power plants in the city.

Carpenter, *Experimental Engineering*.

One laboratory period of three hours and one lecture a week. Seniors in Mechanical-Electrical Engineering.

3.* Internal Combustion Engines.

A study of the theory, construction and operation of internal engines. Gas and gasoline engines of both the four stroke cycle and two stroke cycle are tested in the laboratory of experimental engineering.

Carpenter & Diederichs, *Internal Combustion Engines*.

Three hours a week. First term. Open to Seniors in Mechanical-Electrical Engineering,

4. Irrigation Engineering.**

A study of the engineering problems of irrigation in arid and humid countries; the meaning and extent of irrigation works, with special reference to the irrigation of rice and other products of this section.

Wilson, *Manual of Irrigation Engineering*.

Three hours a week. Second Term. Open to Seniors in Mechanical-Electrical Engineering.

FRENCH

(See under Romance Languages).

GEOLOGY

MR. MACDONALD

Richardson Chemistry Building.

1.* Physiography.

This course is intended to serve as an introduction to science; the following topics will be studied: The elements of physics and chemistry, and their relation to the formation and composition of the earth's crust; mountain-building and valley-making processes; volcanoes; earthquakes; the sea; dew, rain, and snow; movements of the earth and its relation to the sun, moon, and planets.

Three hours a week, recitations and lectures; and two laboratory periods of one hour each. First term. Open to A. and S. Sophomores who offered for entrance only one unit in the following sciences, physics, chemistry, physical geography.

2. Geological Materials.**

The following subjects will be briefly studied: The geographical relations, occurrences, composition, and economic bearing of the

common mineral and rocks, especially those used for building; soils; clays; coals; peat; salt; sulphur; oil and gas; road material; iron, gold, silver, copper, etc.

Three hours a week, recitations and lectures; and two laboratory periods of one hour each. Second term. Open to all students who have studied the elements of chemistry or physiography.

3. Principles of Geology.

The course will consist of lectures and readings on general geology, illustrated with museum specimens, maps, and views. Special attention will be given to the processes and materials with which the engineer has to deal, such as the formation of natural levees; bars and shoals in rivers and harbors, ground waters, artesian wells, and water supply; cements, building stones, clays, road materials.

Norton, or Chamberlain and Salisbury, *Elements of Geology*.

Three hours a week, lectures and recitations; and one half-hour study of maps and specimens. Civil Engineering Seniors. Elective in A. and S.

GERMAN

ASSISTANT PROFESSOR RANSMEIER MR. SCHMIDT

Gibson Hall, Room 33

1. Elementary German.

Pronunciation, grammar, and exercises. Easy standard prose. The object of this course is to teach the student the fundamental principles of grammar, to write easy sentences, to read simple prose, and to understand an easy form of the spoken language.

Three hours a week. RANSMEIER, SCHMIDT

2. Intermediate German.

Lyric poetry, and selected works of the narrative and dramatic literature of the nineteenth century. Written and oral drill. Collateral reading of simpler German for the development of speed. Selected readings in the history of German literature.

This Course presupposes the completion of Course 1.

Three hours a week. RANSMEIER

3. Scientific German.

Drill in pronunciation and rapid reading. A reader of graded selections will be followed by one or more works of recognized scientific value.

This course presumes the completion of German 1.

Three hours a week. SCHMIDT

4. Introduction to the Classical Period of the Eighteenth Century.

Lessing's *Nathan der Weise*, Schiller's *Wilhelm Tell*, and Goethe's *Tasso*. Collateral reading and study of the literary history of the period. Oral and written drill.

This course follows course 2.

Three hours a week. RANSMEIER

5. Nineteenth Century Narrative and Dramatic Literature.

A rapid reading course in the masterpieces of this century. Collateral reading in the history of nineteenth century literature.

This course presumes the completion of courses 1, 2, and 4, or their equivalents.

Three hours a week. RANSMEIER

GREEK

(See under Classical Languages).

HISTORY AND POLITICAL SCIENCE

PROFESSOR PHILLIPS

Gibson Hall, Room 25.

1. Mediæval and Modern Europe.

A general survey of European history from the barbarian invasions to recent times.

Lectures, recitations, collateral reading.

Robinson, *History of Western Europe*, Vol. I; Munro and Sellery, *Mediaeval Civilization*; Robinson and Beard, *Development of Mobern Europe*.

Three hours a week. Required of Freshmen in the College of Arts and Sciences.

2. History of England.**

A general survey, with principal attention to the modern period.

Lectures, recitations, collateral reading.

Tout, *History of Great Britain*.

Three hours a week. Second term. Elective for Literary Sophomores.

3. History of Colonial America.

The course extends from Columbus' discovery to the revolt from British control.

Lectures, discussions, collateral reading, reports.

Channing, *History of the United States*, Vols. I and II.

Three hours a week. Elective for Juniors and Seniors in the College of Arts and Sciences and for Seniors in the College of Technology.

This course alternates with course 4. It will not be given in 1910-11.

4. Political and Social History of the United States.

Extends from the foundation of the Union to the period of Reconstruction.

Three hours a week. Elective on the same basis as course 3, with which it alternates. Given in 1910-11.

5. The Government of England.

Lowell, *The Government of England.*

Three hours a week. Elective on the same basis as courses 3 and 4. Alternates with course 6. Not given in 1909-10.

7. Government in the United States.

Three hours a week. Elective on the same basis as courses 3, 4, and 5. Alternates with course 5. Given in 1910-11 only in case there is effective demand for it by students.

HISTORY OF ART

PROFESSOR MILLER PROFESSOR W. WOODWARD

MR. OWEN

Gibson Hall

A course of lectures illustrated with lantern slides and extending over a period of two years, is given, in which pupils are carried through an analytical study of the evolution of architectural art. Particular stress is laid upon the origin and successive development of the historic styles of Europe, so as to afford pupils a comprehensive knowledge of the architecture of the past, with a view to its bearing upon present conditions and needs. Special study is therefore devoted to the architecture of warm climates, in order that its characteristics may be understood by those whose work later in life will be the designing and direction of work in the Southern states and the tropics. A resumé of the architectural history of the United States is included, to the end that students should be cognizant of the present standing of the architecture of their own country.

Drawings, tracings, sketches, research work, and short essays made in the intervals of lectures and during vacation, are required to assist in fixing the essential facts.

[1. **History of Ancient and Classic Architecture.**

During the first term of the first year the architecture of Ancient Egypt, Assyria, and Persia is studied as leading up to the all-important subject of the art of Greece, which is the foundation of classic architecture, and which is developed with great care during the fina weeks of the term.

The second term is devoted to the architecture of Rome and the early styles developed therefrom, the Early Christian, Byzantine, and Romanesque.

Hamlin, *History of Architecture.*

One illustrated lecture a week and exercises. Freshmen and Sophomores.

OWEN]

Course 2, alternating with course 1, will not be given in 1910-11.

2. History of Medieval, Renaissance, and Modern Architecture.

After a brief study of the Saracenic styles, European architecture is resumed in the first term of the second year, covering the Gothic and transitional styles down to period of the Renaissance, to which the entire second term is devoted, together with the architectural development of the nineteenth century in Europe and America. The pupil is also made familiar with the works of the great masters, in order that his training shall be well rounded. Throughout the course the pupil's historical work is planned to co-ordinate with his work in design, in order that the usefulness of both courses for culture, mental training, and practical application may be secured.

Hamlin, *History of Architecture.*

One illustrated lecture a week and exercises. Sophomores and Juniors. OWEN

3. Civilization and Art.

A critical study of the life and art of the Greeks.

One illustrated lecture a week and text-book. Juniors and Seniors.

MILLER

4. History of Ornament and Painting.

One illustrated lecture a week and readings. Juniors and Seniors.

WOODWARD

HYDRAULICS

PROFESSOR GREGORY

Engineering Building

1. Hydrostatics and Theoretical Hydraulics.

The flow of water through orifices, weirs, pipes, and channels. Hydrodynamics.

Merriman, *Hydraulics.*

Four hours a week. Second term. Seniors in Civil and Mechanical-Electrical Engineering.

KINEMATICS

MR. ROBERT

Engineering Building

1.* Kinematics of Machinery.

This course includes a study of the action of the various combinations of machine elements without regard to the strength of those elements, and of the communication of motion by gear wheels, belts, cams, link work, parallel motions, and quick return movements.

Barr, *Kinematics of Machinery.*

Three hours a week. First Term. Juniors in Mechanical-Electri-

2.* Kinematic Drawing.

The purpose of this course is to apply the principles discussed in Course 4 to practical problems.

Three periods a week. First Term. Juniors in Mechanical-Electrical Engineering.

LATIN

(See under Classical Languages).

MATHEMATICS

ASSOCIATE PROFESSOR DINWIDDIE MR. BAGOT

MR. LITTLETON

1.* Algebra.

Infinite series, undetermined coefficients with application to infinite series and partial fractions, permutations and combinations, probability, logarithms and the elements of determinants.

Wells, *Advanced Course in Algebra.*

Five hours a week. First term. BAGOT, LITTLETON

2. Plane and Spherical Trigonometry.**

Theory and application of the trigonometric functions, with special attention to their periodic and related properties.

Crockett, *Plane and Spherical Trigonometry.*

Five hours a week. Second term. BAGOT, LITTLETON

3. Analytic Geometry.**

A brief introductory course in plane analytic geometry.

Smith and Gale, *Elements of Analytic Geometry.*

Five hours a week. Second term. BAGOT, LITTLETON

4.* Analytic Geometry.

Elements of plane and solid analytic geometry supplemented by a brief course of lectures on special subjects. A continuation of course 3.

Smith and Gale, *Elements of Analytic Geometry*; Charles Smith, *Conic Sections.*

Five hours a week. First term. DINWIDDIE

5. Differential and Integral Calculus.**

The fundamental principles of the differential and integral calculus with special application to geometry and mechanics.

Granville, *Elements of Differential and Integral Calculus.*

Five hours a week. Second term. DINWIDDIE

6.* Differential and Integral Calculus.

An advanced course in differential and integral calculus. Open to all students who have completed Courses 1 to 5. Elective for Juniors and Seniors.

Three hours a week. First term. DINWIDDIE

7. Differential Equations.**

The elements of differential equations with application to geometrical and physical problems. Elective for Juniors and Seniors.

Murray, *Differential Equations.*

Three hours a week. Second term. DINWIDDIE

MECHANIC ARTS

ASSOCIATE PROFESSOR RUGAN MR. CRESPO

Engineering Building.

1.* Carpentry and Wood-Turning.

A series of exercises in sawing, planing, splicing, mortising, dovetailing, rabbeting, paneling, and other work involving the common carpenter tools.

Text-books: Goss, *Bench-work in Wood;* Golden, *Exercises in Wood-turning.*

Four hours a week. First Term. Engineering Freshmen.

CRESPO

2.* Technical Instruction.

This course deals with the character of wood-working tools, their care and adjustment, the shrinking and warping of woods, the form, adaptation, and relative strengths of joints.

Text-books: Goss, *Bench-work in Wood;* Golden, *Exercises in Wood-turning*.

One hour a week. First Term. Engineering Freshmen.

CRESPO

3. Pattern-Making and Foundry Work.**

This course includes instruction and practice in making patterns and core-boxes for various machinery castings, making the cores and the castings in the foundry, and mixing and melting metals in the cupola and crucible furnace.

All work is done from drawings and blue-prints.

Four hours a week. Second Term. Engineering Freshmen.

CRESPO

4. Technical Instruction.**

Lectures on the correct methods of making and building up patterns, making core-boxes, allowance for the twisting and shrinkage of castings, defects due to improper ramming and venting, the mixing of metals, design of castings to secure the best results, and the care of the cupola while taking off a heat.

Text-book: Rugan, *Text-book of Elementary Pattern-making and Foundry Practice*.

One hour a week. Second Term. Engineering Freshmen.

CRESPO

5. Forging and Tool-Making.

This course includes exercises in heating, bending, drawing, up-setting, shaping, twisting, and welding, and in case-hardening, annealing steel, forging, hardening, and tempering tools. All work is done from blue-prints.

6. Machine-Tool Work.

Exercises in chipping, filing, and scraping, such as facing valves, making face-plates, and fitting parts of machinery; machine work in turning, facing, boring, planing, drilling, and thread-cutting. All work is done from drawings.

Six hours a week. Mechanical-Electrical Engineering Sophomores.

RUGAN

7. Technical Instruction.

Lectures on the management of iron in forging, the proper heats for

various work, the correct method of making the different welds, and the several ways of case-hardening, the injurious effects of overheating steel, the proper methods of hardening and tempering the different kinds of steel, and the straightening of hardened tools.

Lectures on the proper speeds of shafting, the proper feeds and speeds for the machining of different metals, the proper shape and use of cutting tools.

Text-book: Bacon's *Forge Practice*; Leonard, *Machine-Shop Tools and Methods*.

One hour a week. Mechanical-Electrical Engineering Sophomores.

RUGAN

8. Advanced Machine-Tool Practice.

Construction, assembling, and testing of special machines designed by the students; making taps, reamers, cutters, and other lathe and milling machine-work; grinding and shaping milling tools, reamers, etc.; and producing articles of exact size, mandrels, gages, etc. All work is done from drawings.

Two hours a week. Juniors in Mechanical-Electrical Engineering.

RUGAN

9. Technical Instruction.

Lectures on the design and use of jigs, modern machine-shop practice, approved methods of producing interchangeable work by the use of jigs, special, automatic, and grinding machines.

Text-book: Leonard, *Machine Shop Tools and Methods*.

One hour a week. Juniors in Mechanical-Electrical Engineering.

RUGAN

The courses in Technical Instruction include visits to different manufacturing plants at such times as the courses may permit.

MECHANICAL ENGINEERING

PROFESSOR CREIGHTON

Engineering Building

1. Mechanics of Materials.

All structures, whether they are partly in motion, as in machinery, or entirely quiescent, as in the case of roofs, bridges, buildings or foundations, are composed of elements that are subjected either to pull, thrust, bending, torsion, or a combination of two of these. This subject deals with the application of the laws governing the design of such elements, so that they may have the proper shape and dimensions to secure sufficient rigidity and strength to perform their required

office. Students are required to design and draw a built-up girder and a roof truss.

2. Graphical Statics.

Graphic analysis of the stresses in roofs and bridges under dead and wind loads.

Three hours a week, first term; and four hours a week, second term. All Engineering Juniors.

Merriman, *Mechanics of Materials*, Ketchum, *Steel Mill Buildings*. Reference books: Johnson, Turneaure, and Bryan, *Theory and Practice in Modern Framed Structures*; Birkmire, *Compound Riveted Girders*; Birkmire, *Skeleton Structure as applied to Buildings*; Carnegie and Cambria Hand-books.

3.* Steam Engine and Other Motors in Theory and Practice.

A continuation of the course given in the Junior Year. Entropy, superheat, steam turbines, principles of compound and triple expansion engines, energy of reciprocating parts and class room work in the design of fly wheels, condensers and feed heaters are taken up.

Creighton, *Steam Engine and Other Motors*.

Three hours a week. First term. Seniors in Mechanical-Electrical and Chemical-Sugar Engineering.

4.* Steam Engine Design.

This course is a practical application of courses 1 and 3 to the design of simple, compound, and triple expansion engines and their accessories: condensers, feed water heaters, pumps, and injectors. This involves the designing of the general dimensions of a compound engine from data and also the design, and drawing to scale, of the cylinders, pistons, connecting rods, cross-heads, and other component parts.

Creighton, *Steam Engine and Other Motors*. Reference books: Thurston, *Manual*; Seaton, *Marine Engine*; Unwin, *Machine and Steam Engine Design*.

5.* Valves and Links.

The laws of movement of Corliss valves, independent cut-off valves, and link suspension will be studied and applied to the design of valves to fulfil required conditions.

Halsey, *Valve Gear;* Moss, *Corliss Valve Design;* reference books: Peabody, and Spangler, *Valve Gear*.

Two periods a week. First term. Seniors in Mechanical-Electrical and Chemical-Sugar Engineering.

6.* Steam Boilers.

This subject requires not only the application of course 1 to the de-

sign of fire and water tubular boilers but also involves a study of the laws of combustion, corrosion, and scale formation. Several complete boiler tests are made. An original design of a boiler with its setting and chimney is required.

Parsons, *Steam Boilers*; Kent, *Hand-book*.

Two hours a week. First term. Seniors in Mechanical-Electrical and Chemical-Sugar Engineering.

7. Machine Design.**

In this course there is a further application of course 1 and of other special laws in the determination of the best forms and dimensions of fastenings, bearings, rotating and sliding pieces, belted and tooth gearing, and levers. Designs to scale of simple but complete machines that will fulfil given conditions are required.

Low and Bevis, *Manual of Machine Design*. Reference books: Reuleax, *Constructor;* Unwin, *Machine Design*.

Two hours a week. Second term. Seniors in Mechanical-Electrical and Chemical-Sugar Engineering.

8.* Sugar House Machinery.

This course consists of a series of lectures on multiple effects, vacuum pans, etc., supplementing the text-books, with the working out of the detail dimensions of a 1000 ton sugar-house.

Noell, *Sugar Cane;* Ware, *Beet Sugar Manufacture and Refining*.

Two hours a week. First Term. Seniors in Chemical-Sugar Engineering.

9. Steam Power House Design.**

In this course the various units discussed in Courses 3, 4, 5, 6, and 7, are brought together and the relations of these units to one another are discussed. Complete power plants are laid out to comply with assigned conditions.

Thee hours a week. Second term. Seniors in Mechanical-Electrical and Chemical-Sugar Engineering.

10. Steam Power House Design.**

Complete power houses and sugar houses will be laid out and drawn to scale.

Two period a week. Second term. Seniors in Mechanical-Electrical and Chemical-Sugar Engineering.

11. Heating and Ventilating.**

Principles of heating and ventilating private and public buildings.

Two hours a week. Second term. Elective.

MACHINE DESIGN

MR. ROBERT

Engineering Building

1. Elementary Thermodynamics.**

The Bilgram and Zeuner diagrams and design of steam engine valves and linkwork are taken up.

An elementary course in machine design, dealing with the correct proportions of machine members, and proper shop drawings.

Creighton, *The Steam Engine and other Heat Motors.*

Three hours a week. Second term. All Engineering Juniors.

2.** Application of the principles of Course 1 in drafting room.

Two periods a week. Second term. All Engineering Juniors.

MECHANICS

PROFESSOR ANDERSON

Physics Buildtng

1.* This course is supplementary to Dynamics given in the Physics Course, and is preparatory to the general engineering courses in the Junior and Senior years. Special emphasis is placed on the practical bearings of fundamental mechanical principles, and these principles are illustrated by the solution of many practical problems.

Three hours a week. First term. Juniors in all Engineering Courses.

PHILOSOPHY

PROFESSOR SMITH

Gibson Hall, Room 4.

1.* Psychology.

The train of psychic phenomena will be studied in their general nature, their functional value for the life of man, their correspondence with physiologic processes, and the system of their interrelations. The question of the nature of the soul will also receive consideration

Three hours a week. First term. Elective.

2. Logic.**

Attention will be given to the doctrines of Judgment, of Inference, of Induction, of Hypothesis, and to the Postulates of Knowledge, as

well as to logical praxis in the analysis of argumentation and the detection of fallacies.

Three hours a week. Second term. Elective.

3.* Ethics.

Herein will be comprised a careful study of the elements of the Moral Consciousness, of the development of the Moral Life, of the Nature and Authority of the Moral Standard, and of its application to the problems of practical life.

Three hours a week. First term. Elective.

4. Introduction to Philosophy.**

By various considerations, scientific, historical, and other, there will be shown the necessity and the reasonableness of Philosophy as an element of the general intellectual life, its problems will be defined, its outlines sketched, and its methods illustrated.

Three hours a week. Second term. Elective.

PHYSICS

PROFESSOR BARNETT MR. BERRY

Physics Building.

1. Experimental Physics.

A descriptive course, abundantly illustrated by experiments, and covering in an elementary way the whole range of physics.

Lectures and recitations, three hours a week; laboratory, two to three hours, reports being required in addition. The total credit for the course is five hours. Scientific Sophomores. Open to Classical and Literary Sophomores, Juniors, and Seniors, and to Scientific Freshmen in the School of Technology.

2. General Physics,** Part I: Mechanics and Heat.

Lectures and recitations, three hours a week. Second term. Engineering Sophomores. Open to all other students properly prepared.

3. General Physics, Part II: Electricity and Magnetism, Sound and Light.

Lectures and recitations, three hours a week. Engineering Juniors. Open to all other students properly prepared.

4. Laboratory Work in General Physics, at least three hours a week, reports being required in addition. Credit three hours. Engineering Juniors. Open to all other students properly prepared.

5. Electrical Oscillations and Waves with special reference to telegraphy and telephony, with and without wires.

Lectures and recitations, three hours a week. Open to students who have compltted Physics 3.

6. Optical Measurements or Electrical Measurements.
An advanced laboratory course, open to students who have completed Physics 3, or Physics 1 and Calculus.

ROMANCE LANGUAGES

PROFESSOR FORTIER MR. KAHLE

Gibson Hall, Room 31.

FRENCH

1. Elementary French: Grammar and Reading.
Frazer and Squair, *French Grammar*; Labiche and Martin, *Voyage de M. Perrichon*; De Vigny, *Le Cachet Rouge*; Fortier, *Précis de l' Histoire de France*; Fortier, *Sept Grands Auteurs du XIXe Siècle.*
Three hours a week. KAHLE

2. Second Year French: Literature and Composition.
Prose composition; history of literature; classic drama; scientific reading (College of Technology); private reading of modern plays and stories (College of Arts and Sciences); dictation.
Texts: Vreeland and Koren, *Lessons in French Syntax and Composition*; Fortier, *Histoire de la Littérature Française*; Molière, *Le Bourgeois Gentilhomme*, *Le Misanthrope*, and *Les Femmes Savantes*; Corneille, *Le Cid*, *Polyeucte;* Racine, *Andromaque*, *Britannicus*; La Fontaine, *Fables;* Dike, *Scientific French Reader.*
Three hours a week. KAHLE

3. Third Year French: Literature and Composition.
Review of grammar; prose composition; literature; private reading of plays and novels of the 17th and 18th centuries; dictation.
Texts: Rocherolles et Pessonneaux, *Grammaire Française*, *Cours Supérieur;* François, *Advanced French Prose Composition*; Warren, *French Prose of the 17th Century*; Cohn and Woodward, *Voltaire's Prose*; Marivaux, *Le Jeu de l'Amour et du Hasard*; Beaumarchais, *Le Barbier de Séville.* Hugo, *Hernani* and *Ruy Blas*; Rostand, *Cyrano de Bergerac.*
Three hours a week. FORTIER

4. Fourth Year French: Literature and Composition.
History of literature; class-room and private reading of modern literature, (more particularly the Romantic School and the poets of the

19th century); essays in French on works read; dictation; 16th century French; old French.

Pellissier, *Histoire de la Littérature Française*; Wright, *Selections from Rabelais*; Gaston Paris, *Extraits de la Chanson de Roland*; Canfield, *French Lyrics*, G. Walch, *Anthologie des Poètes Français Contemporains.*

Three hours a week. FORTIER

SPANISH

1. Elementary Spanish.

Grammar; class-room reading; private reading of modern plays and stories.

Giese, *Spanish Grammar and Reader*; Schilling's *Don Basilio*; Morrison's, *tres Comedias Modernas;* Moratin, *El Sí de las Niñas.*

Three hours a week. FORTIER

2. Second Year Spanish: Literature and Composition.

Grammar; composition; class-room reading; private reading of the principal dramatists; history of literature.

De Tornos, *Combined Spanish Method;* Alarcón, *El Capitán Veneno*, Galdós, *Marianela* and *Doña Perfecta*; Extracts from *Don Quijote*; Calderón, *La Vida es Sueño*; Clark, *Spanish Literature.*

Three hours a week. FORTIER

FEES AND EXPENSES

The annual tuition fee, in the Colleges of Arts and Sciences and of Technology, for all students not holding scholarships is $85, payable in three instalments, viz.: $30, $30, and $25, on the appointed Registration Days.

In addition to the above, students are charged a registration fee of fifteen dollars.

Students working in the laboratories are charged an annual fee of fifteen dollars for each laboratory used by them.

Students taking Chemical Laboratory must deposit a fee of $5 to cover cost of breakage.

All tuition and other fees must be paid in advance.

A fee of $5, to cover expenses of graduation, diploma, etc., will be charged to each person taking a degree. This fee must be paid to the Secretary at least ten days before Commencement. The amount will be refunded should the degree not be conferred.

No deduction of fees is made for absence for less than a month. When the absence exceeds a month and the student has been withdrawn from the College because of continued sickness or other sufficient cause, a proportionate part of the amount paid will be refunded. Any application for restitution of tuition must be made within sixty days after the withdrawal of the student.

Students furnish their own books, drawing instruments, and drawing materials. They are required to pay the cost of apparatus which they may break or damage in the laboratories; they must also make good any other damage which they may cause to the University property.

Students may reside in the Dormitories, or obtain board and lodging at from $20 to $25 per month in boarding houses or private families at convenient distance from the University buildings.

The necessary expenses of an Academic student are moderate; the spacious dormitories and the dining hall on the University grounds make possible comfortable, dignified living at a minimum cost.

The necessary expenses for a session are:

	MINIMUM	MODERATE
Tuition fee	$ 85.00	$ 85.00
Registration fee	15.00	15.00
Athletic fee	3.00	3.00
Board and lodging, including heat and lights	135.00	200.00
Laundry	15.00	15.00
Books and stationery	20.00	25.00
Laboratory fees	.. ..	30.00
Total	$273.00	$373.00

Students holding scholarships or free tuition (see below) deduct $85.00 from the above total. Students holding scholarships are not required to pay the Athletic fee.

SCHOLARSHIPS

State Scholarships. Under Section 6 of Act No. 43 of 1884, the University gives free tuition, in the academic department, to one student from each senatorial and from each representative district or parish of the State of Louisiana. In accordance with the terms of this Act, the following rules have been adopted in regard to the candidates for these scholarships:

1. As provided in said act there shall be one such scholarship for each senator and each representative in the state, and it shall confer the privilege of free tuition.

2. Whenever a vacancy exists in the scholarship it may be filled by the then sitting member for that district; provided, however, that the vacancy must be filled before the expiration of his term, otherwise his successor shall make the nomination.

3. The candidate must be a *bona fide* resident of the district or parish from which he is appointed; that is, his parents, or guardian, shall be domiciled in said district or parish.

4. He must be a white male youth, not less than sixteen years of age, prepared for college work.

5. He may enter any regular class for which he is qualified. For entrance to the Freshman class reference is made to the requirements for admission given under Admission to the University,

6. His application for admission to the University must be in writing, stating the name and post-office address of his parents or guardian, and the date of his birth.

7. Accompanying his letter of application he must present his appointment. Blanks for appointment may be obtained from the Secretary of the University. In order to identify the signature to such appointment of the senator or representative making it, his signature must be acknowledged by him before some competent state official.

City Scholarships. In accordance with the provisions of Ordinances Nos. 6767 and 7540, A. S., of the City Council of New Orleans, the Mayor of New Orleans appoints annually five students from the public schools of the City to scholarships in the academic department.

Honor Scholarships. A scholarship in the Freshman Class is awarded annually to that graduate of the McDonogh High School No. 1, of the City of New Orleans, who has been most distinguished for scholarship, deportment, and punctuality. This scholarship is filled upon the recommendation of the Principal and Faculty of the High School.

The Administrators of the University desire to encourage schools of proper grade not only in Louisiana, but in other states, which may prepare students for the University. To this end they have authorized the president and faculty to offer scholarships to meritorious students; two such scholarships are offered annually in each Louisiana school of proper grade and one in each school of proper grade in other states, it being understood that these scholarships are to be a reward of merit, and are to be offered by the principal and faculty of the school or academy to the two students having the highest average grade; and in case either or both decline, the scholarship or scholarships declined should then be offered to the student or students having the next

highest grade, provided that grade fall not below the rank of excellent.

Board Scholarships. The Administrators of the Tulane Educational Fund grant free tuition in the academic department to twenty-five meritorious and needy students. Application blanks for these scholarships may be obtained from Mr. Joseph A. Hincks, Secretary, 211 Camp Street.

The Baker Scholarships, two in number, endowed by the late Mrs. Elizabeth Stone Baker for the education of two poor and worthy young men, are open to graduate and undergraduate students. They yield, each, about $89.90.

The Harvard Scholarship. The Harvard Club of Louisiana maintains a scholarship with an income of about two hundred and fifty dollars, to be awarded to a graduate of Tulane University, with a degree in Arts or Science, who wishes to pursue advanced studies at Harvard University. The appointment is made by the President and Faculty of Tulane University.

Louisiana Battle Abbey Scholarship. This is endowed by the Louisiana Battle Abbey Association and will be awarded to a worthy descendant of a Louisiana Confederate veteran, who shall qualify for it through a competitive examination. Applications for this scholarship should be addressed to Mr. Jos. A. Hincks, Secretary, 211 Camp St.

FORFEITURE OF SCHOLARSHIPS

Students holding State or City Scholarships are required to maintain an average grade of at least seventy per cent in their studies or forfeit their scholarships, this forfeiture to take place at the close of the academic session in June. When a State or City Scholarship has been once forfeited, the legislator or mayor is notified of such forfeiture and the reasons therefor, and a student may re-enter on such scholarship only when newly appointed by the proper officer in the proper legal manner.

Students holding Honor Scholarships or Board Scholarships are required to maintain an average grade of at least seventy per cent in their studies or forfeit their scholarships at the end of any term in which the low average occurs. But any student whose scholarship has been thus forfeited may regain it at the end of the following term if the required standard has been maintained; and the scholarship so regained may be retained as long as the required standard continues to be maintained and not longer.

Holders of scholarships absenting themselves from classes without satisfactory excuse render themselves liable to forfeiture of their scholarships at any time that the faculty may see fit to impose the penalty.

MEDALS

The Glendy Burke Medals—founded in 1848 by Glendy Burke—consist of three gold medals which are awarded, one for Oratory, one for superior attainments in Mathematics, and one for an English Essay.

The Judah Touro Medals—founded in 1848 by Judah Touro—consist of three gold medals, which are awarded for excellence in Latin, in Greek, and in Ancient History.

The Louis Bush Medal—founded in 1882 by Louis Bush—consists of a gold medal and is awarded for the best essay in the French Language.

The J. Hanno Deiler Medal—founded in 1909 by Professor John Hanno Deiler—consists of a gold medal and is awarded for excellence in German.

Competition for the above medals is restricted to members of the Junior and Senior classes.

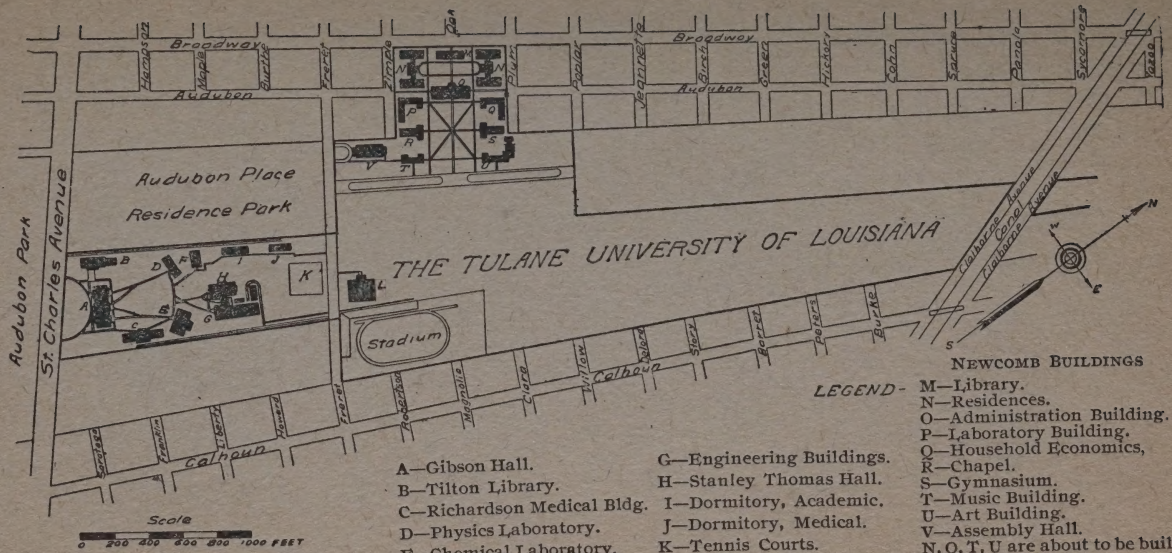
The Carnot Medal.—A medal is offered annually by Baron Pierre de Coubertin to the successful contestant in a debate upon some question related to French politics, and is open to competition to all students of the University.

No medal is awarded except when marked excellence is exhibited in the subject of the competition.

No medal shall be awarded to any student who is under condition at the time of the award of such medal.

In all cases where the awarding of medals is not distinctly specified by the terms of the donation, the students must compete on the basis of work above and beyond the prescribed course; such work will be assigned by the faculty at the end of each session for the succeeding session. The essays must be typewritten and handed to the Secretary of the University not later than May 1st, with a full list of the authorities consulted and a pledge that the work is original, and must bear a fictitious signature, accompanied by the name of the writer in a sealed envelope.

The Funk and Wagnalls Standard Dictionary. A prize offered by the Funk and Wagnalls Publishing Company to that member of the Sophomore Class who passes the best examination in the English language and literature.



PREPARED BY SCHOOL OF CIVIL ENGINEERING

A—Gibson Hall.
B—Tilton Library.
C—Richardson Medical Bldg.
D—Physics Laboratory.
E—Chemical Laboratory.
F—Refectory.
G—Engineering Buildings.
H—Stanley Thomas Hall.
I—Dormitory, Academic.
J—Dormitory, Medical.
K—Tennis Courts.
L—Gymnasium.

LEGEND-

NEWCOMB BUILDINGS

M—Library.
N—Residences.
O—Administration Building.
P—Laboratory Building.
Q—Household Economics,
R—Chapel.
S—Gymnasium.
T—Music Building.
U—Art Building.
V—Assembly Hall.
N, O, T, U are about to be built
M, P, Q, R, S and Y proposed.